-69.rai

09-483-831

ns

```
4.5
Compugen Ltd
version
- 2000
GenCore
(c) 1993
        Copyright
```

model . ≯ using protein search, • OM protein

rch time 20.3 Seconds (without alignments) 907.997 Million cell Search time 13:22:06 2001, 23, July : 0 0

Run

updates/sec

91

US-09-483-831-69 5019

Title:

.... RSYPEILTLKTYLHTYESEI 1 MARRSSFQSCQIISLFTFAV score: Sequence: Perfect

BLOSUM62 Gapop 10.0 Scoring table:

0.5 Gapext

19325 hits satisfying chosen parameters residues 20144635 seds, 193259 of number Searched Total

Minimum

length: 0 length: 2000000000 sed DB DB Maximum

Post-processing

1 0% 1 100% . 45 summaries g: Minimum Match ( Maximum Match 1 Listing first 4

ssued\_Patents Databa

/cgn2\_6/ptodata/2/iaa/5A\_COMB.pep:\*/cgn2\_6/ptodata/2/iaa/5B\_COMB.pep:\*/cgn2\_6/ptodata/2/iaa/6A\_COMB.pep:\*/cgn2\_6/ptodata/2/iaa/6B\_COMB.pep:\*/cgn2\_6/ptodata/2/iaa/PCTUS\_COMB.pep:\*/cgn2\_6/ptodata/2/iaa/PCTUS\_COMB.pep:\*/cgn2\_6/ptodata/2/iaa/backfiles1.pep:\* ........

predicted by chance to have a score of the result being printed, total score distribution. No. is the number of results predigreater than or equal to the score derived by analysis of the total score gand is Pred.

# SUMMARIES

;					pl	, д	, Q	Ω,	$\Omega$	, Q	, Ω	ı O	ı Ω,	Q,	, Q	~	li	$\boldsymbol{H}$	$\overline{}$	$\overline{}$	Q,	p]	pl	p]	ļi	Q.	<u>.</u>
1	Ap	Ap	Ap	Ap	Ap	ιΩ	, Q,	Ap	· Ω	. α	. Ф	. α	ıΩ.	. Q.	ıΩ	dd	App	dd	dd	Ω	ι Q.	Ap	ıΩ,	Ap	, Q.,	Ap	Ap
u o	_				34,		_	67,			38,		36,	36,	36,	9	7,	7	7,	7	19,	54,	54,	54,	4	84,	84,
Description	Seq	Sequence	equen	W	equen	Sequence	Sequence	Sequence	Sequence	Φ	Φ	Sequence	ø	O)	Sequence	O)	Sequence	Sequence	Sequence	a)	a)	Sequence	Sequence	Q	ψ	Sequence	Ū
	08-346-455B-	77-221-6	395-06613-6	46-455	-977-221-3	595-06613-	46-455B-	77-221-6	S95-06613-	46-455B-	-977-221-3	895-06613-3	46-455B-3	-977-221-3	S95-06613-	9-187-331-	-08-392-946-1	-504-169-	894-148	87-331-	-014-96	-346-45	-08-977-221-54	90-5	-11	-08-476-515A-84	-652-877-8
QI	US		PC	ns			OS	OS	= .	nS			OS		PC						nS		ΩS	PC	ÛS	ns	
DB	-	സ	ß	-1	ო	Ŋ	_	ന	S	-	m	ഗ	-	m	വ	m	7	~	S	m	7	Н	က	ഗ	4	4	4
	91	_	$\vdash$	0		~	9	9	9	~	~	~	$\infty$	Φ	$\infty$	$\sim$		$^{\circ}$	N	$\omega$	S				47	4654	9
å Query Match	O	00	00	0	0	ö	œ	œ	ω	S.	ъ.	5	9	٠	9	ь б	ь 6	ص	ف	•	•	•	•	•	•	•	•
<u> </u>	- '	9	10	53	53	53	41	41	41	27	27	27	84	84	84	955.	5	955.	955.	9	Ś	σ	σ	9	•	N	N
Result No.		7	m	4	5	9	7	ω	σ								17										

Unknown

TOPOLOGY: U

8, App	0, App	6, App	1, App	, Appl	Sequence 18, Appl	3, App	3, App	, App	, App	Patent No. 5177197	1, App	Sequence 11, Appl	1, App	Appl	3, App	, App	3, App	
2-877-8	S-08-652-877-9	-08-652-877-8	S-07-822-043-1	S-08-479-722	T-US95-02251-	S-07-822-043-	S-08-346-455B-	S-08-977-2	CT-US95-06613-	177197-	-08-346-45	S-08-977-2	$\vdash$	T-0S95-1	38-701-582D-1	3A	5A-2	
4	4	4	Н	m	ഗ	Н	-	m	S	9	Н	m	ഗ	Ŋ	m	m	4	
65	65	S	~	S	1833										9			
•	•	•	•	•	2.3	•	•	•	•	•	٠	•	•	•	•	•	•	
a	~	a	$\vdash$	$\vdash$	115	$\vdash$	٦	Н	٦	₽	П	$\vdash$	₽	•	0	O	•	
					33													

### ALIGNMENTS

STATES OF AMERICA; DEPT.

LTH AND HUMAN SERVICES

MOTILITY STIMULATING

PROTEIN USEFUL IN CANCER DIAGNOSIS AND

THERAPY

5: 69 REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026-4149PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
FORMATION FOR SEQ ID NO: 69: APPLICATION NUMBER: US/08/346,455B FILING DATE: 28-NOV-1994 CLASSIFICATION: 530 APPLICATION NUMBER: PCT/US95/06613
FILING DATE: 24-MAY-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/822,043 Sequence 69, Application US/08346455B Patent No. 5731167 GENERAL INFORMATION: -DOS FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION: ZIP: 10154
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-D
SOFTWARE: WordPerfect 5.1
CURRENT APPLICATION DATA: MORGAN & FINNEGAN APPLICANT: UNITED STATES OF APPLICANT: OF HEALTH AND HITTLE OF INVENTION: MOTILITIE OF INVENTION: PROTEINTILE OF INVENTION: THERAP NUMBER OF SEQUENCES: 69
CORRESPONDENCE ADDRESS: : 345 PARK AVENUE NEW YORK INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS PRIOR APPLICATION DATA: single DOROTHY R. TYPE: amino acid STRANDEDNESS: sin NEW YORK: U.S.A. ADDRESSEE: 5B-69 STREET: CITY: NE STATE: N LENGTH: US-08-346-45 RESULT

.rai

```
COUNTRY:
                                                                                                                                                                                                                       TOPOLOGY
                                                                         STREET:
CITY: N
                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                     Query Match
                        US-08-977-221
                            Sequence
Patent No
                                    GENERAL
                                                                                                                                  PRIOR
                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                             Matches
901
        901
                                                                                                                                                                                                                                                                        Best
                    RESULT
                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                     Q
        d
Óζ
                                                                                                                                                      420
                                                                                                                                                              420
                                                                                                                                                                                                                                                720
                                                                                                                                                                                                                                                                                                 00
                                                                                     180
                                                                                             80
                                                                                                     240
                                                                                                              240
                                                                                                                      300
                                                                                                                              300
                                                                                                                                      360
                                                                                                                                              360
                                                                                                                                                                       80
                                                                                                                                                                              480
                                                                                                                                                                                       540
                                                                                                                                                                                               540
                                                                                                                                                                                                       900
                                                                                                                                                                                                               900
                                                                                                                                                                                                                       9
                                                                                                                                                                                                                               999
                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                        780
                                                                                                                                                                                                                                                                80
                                                                                                                                                                                                                                                                        840
                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                         00
                                                                             20
                                                                     120
                                                            9
                                                    9
                                                                                                                                                                                                                                                                                                 g
                                             Gap
                                                                                                                                                                                                                                       RYDILYHTDFESGYSEIFLMLLWTSYTVSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCL
                                                                                                                                                                                                                                                                                         KGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDA
                                                                                                                      0;
                                    S
                                    9
                                             Indel
                                             0
                                    \leftarrow
                                    DB
                                      ·- O
                                            Mismatche
                                    5019
No.
                                    Score
Pred.
                                             ö
        protein
                                    100.0%;
                                             Conservative
                IDENTIFICATION METHOD OTHER INFORMATION: 46-455B-69
        ATX
        \boldsymbol{\omega}
                                         l Similarity
915; Conser
        A2058
HYPOTHETICAL FEATURE:
        NAME/KEY:
LOCATION:
                                     Match
                                         Local
                                                                                      S
                                                                                              S
                                                                                                                                                                                               481
                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                 841
                                                                                                                                              301
                                                                                                                                                      361
                                                                                                                                                                              421
                                                                                                                                                                                       81
                                                                                                                                                                                                       541
                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                        199
                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                 81
                         -346
                                                                                     121
                                                                                                                      241
                                                                                                                              241
                                                                                                                                                               361
                                                                                                                                                                       21
                                                                                                                                                                                                                                                        721
                                            Matches
                                                                     61
                                                                             61
                                                                                              121
                                                                                                      81
                                                                                                              81
                                                                                                                                      301
                                                     Н
                                      uery
est I
                         ထ
                                     Qu.
Be
                         0
                                                             d
                                                                                              g
                                                                                                              d
                                                                                                                              g
                                                                                                                                              Б
                                                                                                                                                               d
                                                                                                                                                                              a
                                                                                                                                                                                       QΥ
                                                                                                                                                                                               da
                                                                                                                                                                                                        ÓΣ
                                                                                                                                                                                                               d
                                                                                                                                                                                                                        QY
                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                  g
                                                                             엄
                                                                                                                                                       δ
                                                                                                                                                                       δ
                                                                                                      φ
                                                                                                                      δ
                                                                                                                                      Q
                                                                      ò
                                                     δ
                                                                                      ð
```

```
GRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENACHC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 915;
                                                                                                                                                                      AND
                                                                                                      STATES OF AMERICA; DEPT.

LTH AND HUMAN SERVICES

MOTILITY STIMULATING

PROTEIN USEFUL IN CANCER DIAGNOSIS AN

THERAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 5019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36,434
:R: 2026-4149US3
                                                                                                                                                                                                                                                                                                                                                                                        US/08/977, 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MBER: 08/249,182
25-MAY-1994
                                                                                         69, Application US/08977221
). 6084069
                                                                                                                                                                                                                          : MORGAN & FINNEGAN
345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                            08/346,4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                    IBM PC compatible YSTEM: PC-DOS/MS WordPerfect 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 20
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A2058 ATX protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-NOV-1994
                                                                                                                              APPLICANT: UNITED STATES O
APPLICANT: OF HEALTH AND H
TITLE OF INVENTION: MOTILI
TITLE OF INVENTION: PROTEI
TITLE OF INVENTION: THERAP
NUMBER OF SEQUENCES: 69
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                         Floppy Disk
                                                                                                                                                                                                                                                                                                                                                             WordPerfect
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; IDENTIFICATION METHOD; OTHER INFORMATION: US-08-977-221-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                           ZIP: 10154
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      singl
                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER:
FILING DATE: 28-NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown
amino acid
                                                                                                                                                                                                                                                                                                                                                    OPERATING SYSTEM:
                                                                                                     No. 6Ub4vv.
                                                                                                                                                                                                                                                                   NEW YORK: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
nes 915; Conser
                                                                                                                                                                                                                                                     NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                        DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HYPOTHETICAL:
                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY:
                                                                                -69
                                                                                                                                                                                                                                                                                                                                         COMPUTER:
                                                                                                                                                                                                                                                                                                                                                               SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION
```

ö

```
360
                                                                                         360
                                                                                                                         480
     120
                180
                          180
                                    240
                                               240
                                                          300
                                                                    300
                                                                                                    420
                                                                                                               420
                                                                                                                                    480
                                                                                                                                                        540
                                                                                                                                                                  900
                                                                                                                                                                                                             720
                                                                                                                                              540
                                                                                                                                                                             600
                                                                                                                                                                                        099
                                                                                                                                                                                                  9
                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                       840
                                                                                                                                                                                                                                                                  840
                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                       900
               GRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENACHC
                                    KGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDA
                                                                                    KIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLKLRRCVNVIFVGDHGMEDVTCD
                                                                                                                                             VGYGPTFKYKTKVPPFENIELYNVMCDLLGLKPAPNNGTHGSLNHLLRTNTFRPTMPEEV
                                                                                                                                                                                                                                  PSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRR
                                                                                                                                                                                       TRPNYPGIMYLOSDFDLGCTCDDKVEPKNKLDELNKRLHTKGSTEERHLLYGRPAVLYRT
                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                 ILTLKTYLHTYESEI
||||||||||||||
ILTLKTYLHTYESEI
     . 19
                                                                                         301
                                                                                                                        421
                                               181
                                                          241
                                                                    241
                                                                                                    361
                                                                                                              361
                                                                                                                                                        481
               121
                          121
                                    181
                                                                               301
                                                                                                                                   421
                                                                                                                                             481
                                                                                                                                                                   541
                                                                                                                                                                             541
                                                                                                                                                                                        601
                                                                                                                                                                                                 601
                                                                                                                                                                                                             661
                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                             841
                                                                                                                                                                                                                                                                                       841
                                                                                                                                                                                                                                                                                                 901
                                                                                                                                                                                                                                                                                                            901
                                                                                                                                                                             g
                          ద
                                               В
                                                                    <u>අ</u>
                                                                                         심
                                                                                                              d
                                                                                                                                   g
                                                                                                                                                        d
                                                                                                                                                                                        ð
                                                                                                                                                                                                  g
                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                            d
     a
                ğ
                                                          ð
                                                                                                                        Qγ
                                                                                                                                              Q
                                                                                                                                                                  9
                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                       Ω
                                    Q
                                                                               ğ
                                                                                                    ð
                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                             ð
```

20/2

RESULT PCT-US

S

DIAGNOSIS AND

STIMULATING USEFUL IN CANCER

CT-US95-06613-69
Sequence 69, Application PC/TUS9506613
GENERAL INFORMATION:
APPLICANT: STRACKE, MARY; LIOTTA, L.
APPLICANT: SCHIFFMANN, ELLIOTT; KRUAPPLICANT: HENRY; MURATA, JUNTITLE OF INVENTION: MOTILITY STIMULTITLE OF INVENTION: THERAPY
NUMBER OF SEQUENCES: 69
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORGAN & FINNEGAN

The the the the the the the the the the

A, LANCE; KRUTZSCH,

301 121 181 181 241 121 241 301 δ d Q a a d Q δ

360

180 120 120 180 240 300 240 300 360 9 60 KGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDA ö 915 Length ö <u>ن</u> DB Score 5019; Pred. No. 0; ); Mismatches -4149US2 PCT/US95/0661 TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: S IBM PC compatible FILING DATE: 28-NOV-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994 MBER: 07/822,04. 17-JAN-1992 S A2058 ATX protein 0; APPLICATION NUMBER: 08/346 FILING DATE: 28-NOV-1994 SOFTWARE: WordPerfect 5.1 CURRENT APPLICATION DATA: APPLICATION NUMBER: PCT/U Query Match Best Local Similarity 100.0%; Matches 915; Conservative ( APPLICATION NUMBER: 07/8 FILING DATE: 17-JAN-1992 ATTORNEY/AGENT INFORMATION: NAME: DOROTHY R. AUTH 24-MAY-1995 TELEFAX: (212) ....
INFORMATION FOR SEQ ID NO: 6
SEQUENCE CHARACTERISTICS: : 345 PARK AVENUE NEW YORK ; IDENTIFICATION METHOD: ; OTHER INFORMATION: PCT-US95-06613-69 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy COMPUTER: IBM PC COM PRIOR APPLICATION DATA: PRIOR APPLICATION DATA: single CDNA Unknown acid STREET: 345 PARK CITY: NEW YORK STATE: NEW YORK COUNTRY: U.S.A. OPERATING SYSTEM: CLASSIFICATION: STRANDEDNESS: FILING DATE: TYPE: 10154 HYPOTHETICAL: TOPOLOGY: MOLECULE TYI NAME/KEY: LOCATION: FEATURE: 61 61 d ð 엄 Qγ

ö

Tue

ゼ

.rai

69

ı

```
420
                  420
                                   480
                                                     480
                                                                       540
                                                                                         540
                                                                                                          900
                                                                                                                            900
                                                                                                                                               999
                                                                                                                                                               999
                                                                                                                                                                                 720
                                                                                                                                                                                                   720
                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                    RYDILYHTDFESGYSEIFLMLLWTSYTVSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCL
                                                                                                                                                                                                                                                                                           LSVSSFILPHRPDNEESCNSSEDESKWVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPE
KIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLKLRRCVNVIFVGDHGMEDVTCD
                                  AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                   DIAGNOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                       UNITED STATES OF AMERICA; DEPT.
OF HEALTH AND HUMAN SERVICES
VENTION: MOTILITY STIMULATING
VENTION: PROTEIN USEFUL IN CANCER
VENTION: THERAPY
                                                                                                                                                                                                                                                                                                                                                                                            Sequence 34, Application US/08346455B; Patent No. 5731167; GENERAL INFORMATION:
APPLICANT: UNITED STATES OF AMERICA; APPLICANT: OF HEALTH AND HUMAN SERV:
TITLE OF INVENTION: PROTEIN USEFUL; TITLE OF INVENTION: THERAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: PCT/US95/0661 FILING DATE: 24-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ...1
JABER: US/08/346
28-NOV-1994
N: 530
JN PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 345 PARK AVENUE
CITY: NEW YORK
STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS SOFTWARE: WordPerfect 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Floppy Disk
                                                                                                                                                                                                                                                                                                                                915
                                                                                                                                                                                                                                                                                                                                                 Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA APPLICATION NUMBER: U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ING DATE: 24-MAY APPLICATION DATA
                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRE
ADDRESSEE: MORGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: NEW YORK
STATE: NEW YORK
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 10154
COMPUTER READABLE
MEDIUM TYPE: F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                     -455B-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR
361
                  361
                                                    421
                                                                                                                            541
                                                                                                                                                               601
                                                                                                                                                                                 661
                                                                                                                                                                                                   661
                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                                             841
                                                                                                                                                                                                                                                                                                               841
                                                                                                                                                                                                                                                                                                                               901
                                                                                                                                                                                                                                                                                                                                                 901
                                    21
                                                                       481
                                                                                         481
                                                                                                           541
                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                     -08-346
                                     4
                                                                                                                                                                                                                                                                                                                                                                             RESULT
                  d
                                                     d
                                                                                         d
                                                                                                                           d
                                                                                                                                                               임
                                                                                                                                                                                                   g
                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                  g
                                     ğ
                                                                       Q
                                                                                                           ŏ
                                                                                                                                               δ
                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                         ŏ
```

```
206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             566
                                                                                                                                                                                                                                                                                                                                                                                                                14
                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHDFDELCLKTARGWECTKDRCGEVRNEENACHCSEDCLARGDCCTNYQVVCKGESHWVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ARKPLDVYKKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMC
                                                                                                                                                                                                                                                                                                                                                                                                                          CHDFDELCLKTARGWECTKDRCGEVRNEENACHCSEDCLARGDCCTNYQVVCKGESHWVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ó
                                                                                                                                                                                                                                                                                                                                                                             829
                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                          Autotaxin
                                                                                                                                                                                                                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                            П
                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                          4533;
No. 0;
                                                                          36,434
R: 2026-4149PCT
                                                                                                                                                                                                                                                                                                                                protein
of A2058
FILING DATE: 25-MAY-1994

PRIOR APPLICATION DATA:

APPLICATION DATA:

APPLICATION NUMBER: 07/822,043

FILING DATE: 17-JAN-1992

ATTORNEY/AGENT INFORMATION:

NAME: DOROTHY R. AUTH

REGISTRATION NUMBER: 36,434

REFERENCE/DOCKET NUMBER: 2026-414

TELEPHONE: (212) 758-4800

TELEFOMMUNICATION INFORMATION:

TELEPHONE: (212) 758-4800

TELEFAX: (212) 751-6849

INFORMATION FOR SEQ ID NO: 34:

SEQUENCE CHARACTERISTICS:

LENGTH: 829

TYPE: ami-
                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                Putative
                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                         sednence
                                                                                                                                                                                                                                                                                                                                                                           90.3%;
ilarity 99.9%;
Conservative
                                                                                                                                                                                                                                                                                                                     IDENTIFICATION METHOD:
OTHER INFORMATION: Pu
OTHER INFORMATION: Se
46-4558-34
                                                                                                                                                          ss: single
Unknown
                                                                                                                                                                              protein
                                                                                                                                                                                                                                                                 Melanoma
A2058
                                                                                                                                                                                                                           INDIVIDUAL ISOLATE:
DEVELOPMENTAL STAGE
HAPLOTYPE:
TISSUE TYPE:
                                                                                                                                                         STRANL TOPOLOGY: U....
TOPOLOGY: U....
                                                                                                                                                                                                           Human
                                                                                                                                                                                                                                                                                                                                                                                     l Similarity
828; Conser
                                                                                                                                                                                                 ORIGINAL SOURC
ORGANISM: H
                                                                                                                                                                                       HYPOTHETICAL:
                                                                                                                                                                                                                                                              CELL TYPE:
CELL LINE:
ORGANELLE:
                                                                                                                                                                                                                                                                                                              LOCATION:
                                                                                                                                                                                                                                                                                                     NAME/KEY
                                                                                                                                                                                                                   STRAIN:
                                                                                                                                                                              MOLECULE
                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     147
                                                                                                                                                                                                                                                                                                                                                                                                                87
                                                                                                                                                                                                                                                                                                                                                                                                                                   Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             507
                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                  -08-346
                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                  õ
```

ö

Š

```
d
                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                        ğ
                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <del>a</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                            540
                                                                                       900
                                                                                                             746
                                                                                                                                  099
                                                                                                                                                       806
                                                                                                                                                                            720
                                                                                                                                                                                                  866
                                                                                                                                                                                                                       780
                     DLLGLKPAPNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLQSDFDLGCTCDDKVE
                                                               ARKPLDVYKKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMC
                                                                                                                                                                                                                                             915
                                                                                                                                                                                                                                                                 82
                                                                                                                                                                                                                                                                                                                   Sequence 34, Application US/08977221
Patent No. 6084069
GENERAL INFORMATION:
APPLICANT: UNITED STATES OF AMERICA; DEPT.
APPLICANT: OF HEALTH AND HUMAN SERVICES
TITLE OF INVENTION: MOTILITY STIMULATING
TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS
TITLE OF INVENTION: THERAPY
NUMBER OF SEQUENCES: 69
                                                                                                                                                                                                                                            WVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESEI
                                                                                                                                                                                                                                                        36,434
R: 2026-4149US3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/977,221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: WordPerfect 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MBER: 08/249,182
25-MAY-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08/346,455
                                                                                                                                                                                                                                                                                                                                                                                                                               345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 20
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Floppy Disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE: (212) 758-48
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA APPLICATION NUMBER: U
                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 28-NOV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 25-MAY-PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHARACTERISTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                NEW YORK: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10154
                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                T 5
-977-221-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY
                                                                                                                                                                                                                                            867
421
                                          481
                                                                                     541
                                                                                                                                                     747
                                                                                                                                                                                                                                                                 781
                                                                                                                                601
                                                                                                                                                                                                                      721
                                                                627
                                                                                                          687
                                                                                                                                                                           199
                                                                                                                                                                                                 807
                     567
                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                             9
                                          a
                                                                                     d
                                                                                                                                d
                                                                                                                                                                           g
                                                                                                                                                                                                                      g
                                                                Qγ
                                                                                                           ò
                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                            δ
```

```
206
                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                      266
                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                326
                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                            386
                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                       446
                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                   506
                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                              999
                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  900
                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                         626
                                                                                                                                                                                                                                                                                                                                                                                                                                                     989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           806
                                                                                                                                                                                                            9
                                                                                                                                                                                                14
                                                                                                                                                                                              QGVKAGTFFWSVVIPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEES
                                                                                                                                                                                                                                                                                                            DLLGLKPAPNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLQSDFDLGCTCDDKVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    SKFSNNAKYDPKAIIANLTCKKPDQHFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHV
                                                                                                                                                                                                                                                                                                                                                                          DAFLVTNMVPMYPAFKRVWNYFQRVLVKKYASERNGVNVISGPIFDYDYDGLHDTEDKIK
                                                                                                                                                                                  ö
                                                                                                                                                                    29
                                                                                                                                                                    œ
                                                                                                                                                                                  Indels
                                                                                                                                                                     Length
                                                                                                                                          Autotaxin
                                                                                                                                                                                 1;
                                                                                                                                                                    ന
                                                                                                                                                                    DB
                                                                                                                                                                    Score 4533; D. Pred. No. 0; O; Mismatches
                                                                                                                                  protein
of A2058
                                                                                                                                  Putative
sequence
                                                                                                                                                                                 .;
0
                                                                                                                                                                   90.3%;
ilarity 99.9%;
Conservative
                                                                                                                    LOCATION:
IDENTIFICATION METHOD:
OTHER INFORMATION: Put
        single
                                       ORGANISM: Human
STRAIN:
INDIVIDUAL ISOLATE:
DEVELOPMENTAL STAGE:
HAPLOTYPE:
TISSUE TYPE:
CELL TYPE:
CELL LINE: A2058
ORGANELLE:
                                                                                   Melanoma
A2058
             Unknown
acid
                                                                                                                                                                         l Similarity
828; Conser
                       NO.
TYPE: amino
STRANDEDNESS:
TOPOLOGY: Un
MOLECULE TYPE:
HYPOTHETICAL:
                                  ORIGINAL SOURCE
                                                                                                              NAME/KEY
                                                                                                                                                                    Query Match
Best Local S
Matches 828
                                                                                                                                        OTHER 3
                                                                                                       EATURE:
                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                  447
                                                                                                                                                                                               87
                                                                                                                                                                                                                           147
                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                       387
                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                            21
                                                                                                                                                                                                                                                                                                                                                                                                                         267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           747
                                                                                                                                                                                                                                                      207
                                                                                                                                                                                                                                                                                 267
                                                                                                                                                                                                                                                                                                            327
                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                              507
                                                                                                                                                                                                                                                                                                                                                                                                                                                     627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                687
                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                -08
```

ö

-1

d

Н

g

9 t

σ 0

ns

0

```
Φ
 EATU
                                                                                               Query Ma
Best Loc
Matches
                                                                                                                                        87
                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                    447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         346
                                                                                                                                                              +-4
                                                                                                                                                                                   47
                                                                                                                                                                                                                             207
                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                            387
                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          867
                                                                                                                                                                                                                                                                        267
                                                                                                                                                                                                                                                                                                                  327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequenc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 807
                                                               -us9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -80
                                                               CI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RE:
US
                                                                                                                                                              요
                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                    δ
                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
           720
                                866
                                                     780
                               AND
                                                                         WVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESEI 915
                                                                                                                                                                                                                  PROTEIN USEFUL IN CANCER DIAGNOSIS
THERAPY
69
                                                                                    WVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESEI
                                                                                                                                            Sequence 34, Application PC/TUS9506613
GENERAL INFORMATION:
APPLICANT: STRACKE, MARY; LIOTTA, LANCE;
APPLICANT: SCHIFFMANN, ELLIOTT; KRUTZSCH,
APPLICANT: HENRY; MURATA, JUN
TITLE OF INVENTION: MOTILITY STIMULATING
TITLE OF INVENTION: PROTEIN USEFUL IN CANCE;
TITLE OF INVENTION: THERAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            36,434
:R: 2026-4149US2
                                                                                                                                                                                                                                                                                                                                                                                     MBER: PCT/US95/0661
24-MAY-1995
                                                                                                                                                                                                                                                                                                                                  Floppy Disk
IBM PC compatible
YSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 28-NOV-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249 1007
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 34:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                             : MORGAN & FINNEGAN
345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: WordPerfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/USS
FILING DATE: 24-MAY-1995
CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           single
                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Melanoma
A2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INDIVIDUAL ISOLATE:
DEVELOPMENTAL STAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                           NEW YORK : U.S.A.
                                                                                                                                                                                                                                                                                  NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOROTHY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGINAL SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: Un MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino
STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE TYPE:
                                                                                                                                                                                                                                                                                                                10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CELL TYPE:
CELL LINE:
ORGANELLE:
                                                                                                                              RESULT 6
PCT-US95-06613-34
                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HAPLOTYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM:
                                                                                                                                                                                                                                                                                                                                                 COMPUTER:
                                                                                                                                                                                                                                                                                           STATE: N
                                                                                                                                                                                                                                                                      STREET:
CITY: N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE:
                                                                         867
          661
                                                     721
                                                                                             781
                                807
                                                                                              ДQ
                                Qγ
                                                     d
                                                                          ŏ
```

```
360
                                                               206
                                                                                                                       300
                                                                                                                               446
                                                                                                                                               506
                                                                                                                                                      420
                                                                                                                                                                      480
                                                                                                                                                                              9
                                                                                                                                                                                      540
                                                                                                                                                                                              9
                                                                                                                                                                                                      009
                                                                                                                                                                                                              746
                                                                                                                                                                                                                     099
                                                                                                                                                                                                                             806
                                                                                                                                                                                                                                             998
                                                                       0
                                                                                        0
                                                                                                       0
                                                                                                               9
                                                                                                                                                                                                                                     0
                                                                                                                                                              56
                                                14
                                                       9
                                                                                56
                                                                                        18
                                                                                                                38
                                                                                                                                                                              62
                                                                                                                                                                                              99
                                                                       ^{\circ}
                                                                                                                                                                                                                                                     \boldsymbol{\omega}
                                        Gа
                                                                                                                                                                                                                                                  CHDFDELCLKTARGWECTKDRCGEVRNEENACHCSEDCLARGDCCTNYQVVCKGESHWVD
                                                                                                                               S
                                                                                                        S
                                                                                                                                              \frac{SY}{SY}
                                                                                                                                                                                                             SEDESK
                                                                                               O
                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                     σ
                                \infty
                                                                                                                                                                                                                                                                     82
                                                                                                                                                                                                                                                             91
                                         Ø
                                th
                                        Indel
                                                                                                                                                                                                                                                             Φ
                                 Len
                 Autotaxi
                                        Ч
                                S
                                Score 4533;
Pred. No. 0;
0; Mismatches
                               533
                 0
             d N
             proteir of A20
                                                                                                                                                                                                                                                                                         64
             tive
                 sedneuce
                                        ö
                                                                                                                                                                                                                                                                                        Application US/0834
            Putal
                                Match
Local Similarity 99.9%
les 828; Conservative
NAME/KEY:
LOCATION:
IDENTIFICATION METHOD:
OTHER INFORMATION: Sec
                                                                                                                                                                                                                                                                                     $55B-67
67, Ap
                                                                                                                                                   | I | | SKE
                                                                                                                                                                                                                                                                                     4-
```

ન Q

H

g

ന

```
RESULT
                                                                                                                        d
                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                              Š
                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MARRSSFQSCQIISLFTFAVGVSICLGFTAHRIKRAEGWEEGPPTVLSDSPWTNISGSCK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     861;
              THERAPY

THERAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 4418;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -4149PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/346,455B
FILING DATE: 28-NOV-1994
CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /US95/06613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATX protein
                                                                                                                                                                                                                                                                                                                                                                                                    IBM PC compatible YSTEM: PC-DOS/MS-DO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36,434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 07/822,04
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JMBER: 08/249,18
25-MAY-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 67:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12;
                                                                                                                                                                                                                                                                                                                                                                                     MEDIC..
COMPUTER: IBM FC COMPUTER: OPERATING SYSTEM: PC-DOS/1000 PC-POS/1000 P
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: UNITED STATES OF
APPLICANT: OF HEALTH AND HI
TITLE OF INVENTION: PROTEIT
TITLE OF INVENTION: THERAP
TITLE OF INVENTION: THERAP
NUMBER OF SEQUENCES: 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     88.0%;
89.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: PCT/
FILING DATE: 24-MAY-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                 Floppy Disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ss: single
Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IDENTIFICATION METHOD OTHER INFORMATION:
S-08-346-455B-67
                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 25-MAY-PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-tera 2D1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                          FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOROTHY R.
                                                                                                                                                                                                                                                                                     NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 Similarity
822; Conser
                                                                                                                                                                                                                                                              YORK
                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE MEDIUM TYPE: F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY TYPE: PI
                                                                                                                                                                                                                                                                                                             U.S.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS
                                                                                                                                                                                                                                        STREET: 34:
CITY: NEW
STATE: NEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (; INFORMATION FOR
                                                                                                                                                                                                                                                                                                         COUNTRY: UZIP: 10154
                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ğ
```

```
240
                      296
                                    296
                                                                                                             472
                                                                                                                            418
                                                                                                                                           532
                                                                                                                                                                        592
                                                                                                                                                                                       538
                                                                                                                                                                                                                     598
                                                                                                                                                                                                                                                                              718
                                                   352
                                                                                412
                                                                                               59
                                                                                                                                                          478
                                                                                                                                                                                                                                   712
                                                                                                                                                                                                                                                 58
                                                                                                                                                                                                                                                                772
                                                                                                                                                                                                                                                                                             832
                                                                                                                                                                                                                                                                                                           778
                                                                                                                                                                                                                                                                                                                                         838
                                                                                                                                                                                                                                                                                                                          892
                                                                                                                                                                                                                                                               GMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSKFSNNAKYDPKAIIANLTCKKPDQH
                                                   --PSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPV
                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 67, Application US/08977221

Patent No. 6084069

GENERAL INFORMATION:
APPLICANT: UNITED STATES OF AMERICA; DEPT.
APPLICANT: OF HEALTH AND HUMAN SERVICES
TITLE OF INVENTION: MOTILITY STIMULATING
TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS
TITLE OF INVENTION: THERAPY
NUMBER OF SEQUENCES: 69
                                                                  -ISLDTNMPFGPE
                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                      861
                                                                                                                                                                                                                                                                                                                                                         91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        : Floppy Disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                        345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: (CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ري
                                                                  DHERLRSMPSILSNL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MORGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NEW YORK: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE MEDIUM TYPE: F1 COMPUTER: IBM F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: 3
                                                                                                                                                                                                                                                                                                                                                                                                    US-08-977-221-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                    DHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY:
STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP
                                                   297
                                                                                 353
                                                                                                              413
                                                                                                                             360
                                                                                                                                                          419
                                                                                                                                                                         533
                                                                                                                                                                                       479
                                                                                                                                                                                                       593
                                                                                                                                                                                                                     539
                                                                                                                                                                                                                                    653
                                                                                                                                                                                                                                                  599
                                                                                                                                                                                                                                                                 713
                                                                                                                                                                                                                                                                               629
                                                                                                                                                                                                                                                                                              773
                                                                                                                                                                                                                                                                                                                                         779
                                                                                                                                                                                                                                                                                                                                                                       839
        181
                                                                  297
                                                                                                324
                                                                                                                                            \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                                            719
                                                                                                                                                                                                                                                                                                                           33
                                                                                                                                                                                                                                                                                                                                                         893
                                                                                                                                            47
```

```
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Floppy Disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: DOROTHY R. AUTH REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA APPLICATION NUMBER: P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
IOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: EILING DATE: 28-NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MORGAN
5 PARK A
                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: STRACKE,
APPLICANT: SCHIFFMAN
APPLICANT: HENRY; MI
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER FILING DATE: 17-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER FILING DATE: 25-M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           345 PAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           U.S.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: NEW STATE: NEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR
                                                                                                                                                           599
        473
                              419
                                                  533
                                                                       479
                                                                                             593
                                                                                                                   539
                                                                                                                                      653
                                                                                                                                                                                713
                                                                                                                                                                                                     629
                                                                                                                                                                                                                          773
                                                                                                                                                                                                                                               719
                                                                                                                                                                                                                                                                    833
                                                                                                                                                                                                                                                                                         779
                                                                                                                                                                                                                                                                                                              893
                                                                                                                                                                                                                                                                                                                                   839
                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                         d
                                                                                                                                                           d
                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                   g
                               ద
                                                    ŏ
                                                                       g
                                                                                             Óγ
                                                                                                                   g
                                                                                                                                                                                  δ
                                                                                                                                                                                                     a
                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                    QY
                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                        ğ
          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      359
                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --MTNPLREIDKIVGQLMDGLKQLKLHRCVNVIFVGDH
                                                                                                                                                                                                                                                                                                                                                                                                                                                       MARRSSFQSCQIISLFTFAVGVSICLGFTAHRIKRAEGWEEGPPTVLSDSPWTNISGSCK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TFHLRGREKFNHRWWGGQPLWITATKQGVKAGTFFWSVVI----PHERRILTILRWLTLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPKKRRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLKLRRCVNVIFVGDH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DHER----PSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSKFSNNAKYDPKAI IANLTCKKPDQH
                                                                                                                                                                                                                                                                                                                                                                                                                                  70;
                                                                                                                                                                                                                                                                                                                                                                                                              861
                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                  19;
                                                                                                                                                                                                                                                                                                                                                                                                             က
                                                                                                                                                                                                                                                                                                                                                                                                               OB
                                                                                                                                                                                                                                                                                                                                                                                                                       ed. No. 0;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                             Score 4418;
Pred. No. 0
                                                                                                                                                                                            -4149US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   , 221
                                                                                                                                                                                                                                                                                                                                    ATX protein
PC-DOS/MS-DO
                                                CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/346,455
FILING DATE: 28-NOV-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                               REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026
TELECOMMUNICATION INFORMATION:
                                                                                                                                       , 04
                                                                                                       , 18
                               US/08/977
                                                                                                                                                                                                                                                                                                                                                                                                                                 12;
                                                                                                                                      MBER: 07/822
17-JAN-1992
                                                                                                                                                                                                               TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 67
       SOFTWARE: WordPerfect 5.1 RRENT APPLICATION DATA: APPLICATION NUMBER: US/08
                                                                                                                                                                                                                                                                                                                                                                                                           88.0%;
ilarity 89.1%;
Conservative 1
                                                                                                                                                FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                  NAME/KEY: N-tera 2D1 / LOCATION: IDENTIFICATION METHOD:
                                                                                                                                                                                                                                              CHARACTERISTICS
                                                                                                                                                                       AUTH
                                                                                                                                                                                                                                                                               single
                                                                                                                                                                     NAME: DOROTHY R. AUREGISTRATION NUMBER: REFERENCE/DOCKET NUM
                                                                                                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                         Unknown
                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION:
                                                                                                                                                                                                                                                                   acid
SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                      amino
                                                                                                                                                                                                                                                                              STRANDEDNESS
                                          FILING DATE:
                                                                                                                                                                                                                                                                                                  TYPE
                                                                                                                                                                                                                                                                                                           HYPOTHETICAL:
FEATURE:
                                                                                                                                                                                                              TELEPHONE:
OPERATING
        SOFTWARE:
CURRENT APP
                                                                                                                                                                                                                                                                                                                                                                                                                                 822;
                                                                                                                                                                                                                                                          LENGTH:
                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                    MOLECULE
                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           413
                                                                                                                                                                                                                                                                                                                                                                             -977
                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                       -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            297
                                                                                                                                                                                                                                                                                                                                                                             -08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            පු
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΫ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
```

```
538
                                                                          652
                                                                                             598
                                                                                                                                 658
                                                                                                                                                    772
                                                                                                                                                                      718
                                                                                                                                                                                         832
                                                                                                                                                                                                                              892
                                                                                                                                                                                                                                                838
                   478
                                     592
                                                                                                              712
                                                                                                                                                                                                           \boldsymbol{\omega}
                                                                         RPAVLYRTRYDILYHTDFESGYSEIFLMLLWTSYTVSKQAEVSSVPDHLTSCVRPDVRVS
                                                                                                                                                   PADKCDGPLSVSSF1LPHRPDNEESCNSSEDESKWVEELMKMHTARVRDIEHLTSLDFFR
                                                                                                                                                                                                                                                                                                                                                                                            DIAGNOSI
                                                                                                                                                                                                                                                                                                                                                                                           PROTEIN USEFUL IN CANCER
THERAPY
69
                                                                                                                                                                                                                                                                                                                                                      STRACKE, MARY; LIOTTA, LANCE;
SCHIFFMANN, ELLIOTT; KRUTZSCH,
HENRY; MURATA, JUN
                                                                                                                                                                                                                                                                                                                                                                                   STIMULATING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MBER: PCT/US95/06613
24-MAY-1995
                                                                                                                                                                                                                                                                                                                          PCT-US95-06613-67
; Sequence 67, Application PC/TUS9506613
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IBM PC_compatible
YSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ,182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3
                                                                                                                                                                                                                                                                   915
                                                                                                                                                                                                                                                                                      861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MBER: 08/346,45
28-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            04
                                                                                                                                                                                                                                                                                                                                                                                                                                N & FINNEGAN
AVENUE
                                                                                                                                                                                                                                                                                                                                                                        URATA, JUN
MOTILITY S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MBER: 07/822,
17-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MBER: 08/249
25-MAY-1994
                                                                                                                                                                                                                                                                    KTSRSYPEILTLKTYLHTYESEI
                                                                                                                                                                                                                                                                             WordPerfect 5.1
```

```
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGINAL SOURC
ORGANISM: H
                                                                                                                                                                                                                   10154
                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                         HYPOTHETICAL
                                                                                                                                                                                                                                                     SOFTWARE:
                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY
                                                                                                                                                                                          STREET:
                                                                                                                                                                                                CITY:
STATE:
                                                                                                                                                                                                                                                                                                                                                                                                               TYPE:
                                 719
                                                          779
                                                                       893
                                                                                    839
        629
                                              833
                                                                                                        RESULT
        ద
                                 a
                                                          d
                                                                                    g
                     ğ
                                               δ
                                                                        δ
                                                                                                                                             ;
6
                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                        532
                                                                                                                                                                                    120
                                                                                                                                                                                                 120
                                                                                                                                                                                                              180
                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                 296
                                                                                                                                                                                                                                                                              296
                                                                                                                                                                                                                                                                                           352
                                                                                                                                                                                                                                                                                                        323
                                                                                                                                                                                                                                                                                                                    412
                                                                                                                                                                                                                                                                                                                                 359
                                                                                                                                                                                                                                                                                                                                                           418
                                                                                                                                                                                                                                                                                                                                              3
                                                                                                                                                                                                                                                                                                                                                                                    478
                                                                                                                                                                                                                                                                                                                                                                                                 592
                                                                                                                                                                                                                                                                                                                                                                                                              538
                                                                                                                                                                                                                                                                                                                                                                                                                           652
                                                                                                                                                                                                                                                                                                                                                                                                                                       598
                                                                                                                                                                                                                                                                                                                                                                                                                                                    712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              772
                                                                                                                                              Gaps
                                                                                                                                                          9
                                                                                                                                                                       9
                                                                                                                                                                                  KGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDA
                                                                                                                                                                                                                                                                                                                   --WNILLVCCHPSRAEILTILQWLTLP
                                                                                                                                                                                                                                                                                                                                                                       RPAVLYRTRYDILYHTDFESGYSEIFLMLLWTSYTVSKQAEVSSVPDHLTSCVRPDVRVS
                                                                                                                                                                                                                                                                 -PHERRILTILRWLTLP
                                                                                                                                                                                                                                                                                           SVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYDAFLVTNMVPMYPAFKRVWNYFQRVL
                                                                                                                                             ö
                                                                                                                                             7
                                                                                                                                 Φ
                                                                                                                                               S
                                                                                                                                              Indel
                                                                                                                                            19
                                                                                                                                                                                                                                                                S
                                                                                                                                 OB
                                                                                                                                       ed. No. 0; Mismatches
                                                                                                                                  ·~ O
                                                                                                                                 4418
 4149US
                                                                                                                                                                                                                                                                                                       --ISLDTNMPFGPE-
                                                                                                                                 Score Pred.
                                                                                     protei
REFERENCE/DOCKET NUMBER: 2026
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 67:
                                                                                                                                             12
                                                                                    ATX
                                                                                                                                ch 88.0%; l Similarity 89.1%; 822; Conservative
                               SEQUENCE CHARACTERISTICS:
LENGTH: 861
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: Unknown
MOLECULE TYPE: protein
                                                                                    2D1
                                                                                                 METHOD
                                                               proteir
No
                                                                                                                                                                                                                                                                                                       DHERLRSMPSILSNL
                                                                                    N-tera
                                                                                               IDENTIFICATION METOTHER INFORMATION 5-06613-67
                                                                                                                                                                                                                                                                                          Ä
                                                                      HYPOTHETICAL:
FEATURE:
                                                                                         LOCATION:
                                                                                    NAME/KEY
                                                                                                                                                                                                                                                                                           DHER
                                                                MOLECULE
                                                                                                                                 uery Match
                                                                                                                               Query Ma
Best Loc
Matches
                                                                                                                                                                       --
                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                              241
                                                                                                                                                          7
                                                                                                                                                                                    61
                                                                                                                                                                                                              21
                                                                                                                                                                                                                                                                                                                                                                                    419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              713
                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                          297
                                                                                                                                                                                                                                                                                                      297
                                                                                                                                                                                                                                                                                                                    353
                                                                                                                                                                                                                                                                                                                                324
                                                                                                                                                                                                                                                                                                                                              413
                                                                                                                                                                                                                                                                                                                                                                       473
                                                                                                                                                                                                                                                                                                                                                                                                 533
                                                                                                                                                                                                                                                                                                                                                                                                             479
                                                                                                                                                                                                                                                                                                                                                                                                                           593
                                                                                                                                                                                                                                                                                                                                                                                                                                       539
                                                                                                                                                                                                                                                                                                                                                                                                                                                    653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 599
                                                                                                             -US9
                                S
                                                                                                                                                                       qq
                                                                                                                                                                                                 a
a
                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                    QΫ
                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                          Ö
                                                                                                                                                                                                                                        δŽ
                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                       임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
```

```
778
               718
                                                                                                      892
                                                                                                                                   838
PSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYDAFLVTNMVPMYPAFKRVWNYFQRVL
                                            AND
                                                                                                                                                                                                                                                                                          STATES OF AMERICA; DEPT.

LTH AND HUMAN SERVICES

MOTILITY STIMULATING

PROTEIN USEFUL IN CANCER DIAGNOSIS AN
THERAPY

1: 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36,434
R: 2026-4149PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/08/346,455B
FILING DATE: 28-NOV-1994
CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MBER: PCT/US95/06613
24-MAY-1995
                                                                                                                                                                                                                                                                       US/08346455B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249,182
                                                                                                                                                                 915
                                                                                                                                                                                              861
                                                                                                                                                                                                                                                                                                                                                                                                                          FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IBM PC compatible
SYSTEM: PC-DOS/MS-
WordPerfect 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 203
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 38:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                APPLICANT: UNITED STATES O
APPLICANT: OF HEALTH AND H
TITLE OF INVENTION: MOTILI
TITLE OF INVENTION: PROTEI
TITLE OF INVENTION: THERAP
NUMBER OF SEQUENCES: 69
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Floppy Disk
                                                                                                                                                                                                                                                                                                                                                                                                                                       PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC com
OPERATING SYSTEM: PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
FILING DATE: 24-MAY-
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          single
                                                                                                                                                                                                                                                                                                                                                                                                                          MORGAN &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER:
                                                                                                                                                                                                                                                   US-08-346-455B-38; Sequence 38, Application: Patent No. 5731167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INDIVIDUAL ISOLATE:
DEVELOPMENTAL STAGE
HAPLOTYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOROTHY R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NEW YORK: U.S.A.
                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION: APPLICANT: UNITED
                                                                                                                                                                                                                                                                                                                                                                                                                                       : 345 PAF
NEW YORK
```

O

.rai

```
STATE: NEW
                                                                                                                                                                                                                                                        TELEFAX: (INFORMATION FOR
                                                                                                                                                                                                                                                                                                                                     CELL TYPE:
CELL LINE:
ORGANELLE:
                                                                                                                                                                                                                                                    TELEPHONE:
                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                         ORGANISM:
                                                                                                                                                                                                                                                                                                                             HAPLOTYPE
                                           RESULT 11
US-08-977-221-38
                                                                                                                                              COMPUTER:
                                                                                                                                                                                                                                                                                                                                                          NAME/KEY:
LOCATION:
                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                           STREET:
                             840
         780
832
                   892
          d
                             g
δ
                    QΫ
                                                                                                                                             238
                                                                                                                                                       238
                                                                                                                                                                                                                 359
                                                                                                                                                                                                                                                                  592
                                                                                                                                                                                                                                                                           539
                                                                                                                                                                                                                                                                                      652
                                                                                                                                                                                                                                                                                               599
                                                                                                                                                                                                                                                                                                         711
                                                                                                                                                                                                                                                                                                                   629
                                                                                                                                                                                                                                                                                                                                       719
                                                                                                      120
                                                                                                                0
                                                                                                                          178
                                                                                                                                    \boldsymbol{\omega}
                                                                                                                                                                 294
                                                                                                                                                                          294
                                                                                                                                                                                    54
                                                                                                                                                                                              24
                                                                                                                                                                                                        4
                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                    φ
                                                                                                                                                                                                                                              7
                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                                                             771
                                                                                                                                                                                                                                                                                                                                                 831
                                                                                                                                                                                                                                                                                                                                                          Φ
                                                                                            9
                                                                                                                                   17
                                                                                                                                                                                                        41
                                                                                                                                                                                                                           47
                                                                                                                                                                                                                                               53
                                                                                                                                                                                                                                                        47
                                                                                                                                                                                                                                                                                                                                                          11
                                                                                   0
                                                                          Ŋ
                                                                                   9
                                                                                                                                                                                  SCK
                                                                                                                                             SCK
                                                                                                      GRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENACHC
                                                                                                           --WNILLVCCHPSRAEILTILQWLT
                                                                                                                          -PHERRILTILRWLT
                                                                                  0
                                                                σ
                                                                97
                                                                          Ŋ
                                                               Length
                                                                          Indel
                                            liv
                                            human
                                                                                                                                                                36;
                                                               ∺
                                                                DB
                                       .n
from
                                                                         Mismatches
                                                                 .. 0
                                       sequence f
                                                               4279
No.
                                                               Score
Pred.
                                       putative
protein s
                                                                         <u>ښ</u>
                                                                         ₽
                                                               85.3%;
illarity 87.1%;
Conservative 1
                                 IDENTIFICATION METHOD OTHER INFORMATION: PU OTHER INFORMATION: PU 46-455B-38
                                                                     Similarity
\Box
TISSUE TYPE
CELL TYPE:
CELL LINE:
ORGANELLE:
                        NAME/KEY:
LOCATION:
                                                                       11 ST
                                                 346-455B
                                                               Query Match
Best Local S
Matches 805
                   EATURE:
                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                               540
                                                                                                       61
                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                      593
                                                                                                                                                                                                                                                                                                                                                 772
                                                                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                          239
                                                                                                                                                                                              295
                                                                                                                                                                                                                 325
                                                                                                                                                                                                                                                                  533
                                                                                                                                                                                                                                                                                                                   009
                                                                                                                                                                                                                                                                                                                             712
                                                                                                                                                                                                                                                                                                                                      099
                                                                                                                 61
                                                                                                                          21
                                                                                                                                    21
                                                                                                                                              Φ
                                                                                                                                                       9
                                                                                                                                                                 239
                                                                                                                                                                                    295
                                                                                                                                                                                                        Ŋ
                                                                                                                                                                                                                           Ŋ
                                                                                                                                                                                                                                               \mathbf{c}
                                                                                                                                                                                                                                                                                                         653
                                                                                                                                                                                                        35
                                                                                                                                                                                                                           41
                                                                                                                                             17
                                                                                                                                                       17
                                                                                                                                                                                                                                              47
                                                 -08
```

g

Q

Ω

a

δ

d

Ω

q

ŏ

g

g

ά

Qγ

B

g

δ

d

δ

d

Š

g

δ

g

õ

Q

엄

Q

```
839
  891
APPLICANT: UNITED STATES OF AMERICA; DEPT.
APPLICANT: OF HEALTH AND HUMAN SERVICES
TITLE OF INVENTION: MOTILITY STIMULATING
TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS AND
TITLE OF INVENTION: THERAPY
NUMBER OF SEQUENCES: 69
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36,434
R: 2026-4149US3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US/08/977,221
                                                                                                                                                                                                                                                                                                                                                                                                                                                             IBM PC compatible
XSTEM: PC-DOS/MS-DOS
WordPerfect 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MBER: 08/346,455
28-NOV-1994
                                                                                               863
                                                                915
                                                                                                                                                                           Sequence 38, Application US/08977221 Patent No. 6084069 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MBER: 08/249,18
25-MAY-1994
                                                                                                                                                                                                                                                                                                                                       MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 20
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : (212) 758-4800
(212) 751-6849
OR SEQ ID NO: 38:
                                                                RKTSRSYPEILTLKTYLHTYESEI
                                                                                RKTSRSYPEILTLKTYLHTYESEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Floppy Disk
                                                                                                                                                                                                                                                                                                                                                   345 PARK AVENUE
W YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 28-NOV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 10154
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE: 25-MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOLATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM:
SOFTWARE: WORDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                                                    NEW YORK: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INDIVIDUAL ISC
DEVELOPMENTAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HYPOTHETICAL: ORIGINAL SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY: Un
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE TYPE:
```

ט

Ψ Tu

```
APPLICANT:
APPLICANT:
APPLICANT:
                                                                         COUNTRY:
                                                                                                                                                                                                                                                                        LOCATION
                                                                                                                                                                                                                                                                    NAME/KEY
                                                                                                                                                                                               LENGIH:
                                                             STREET:
                                                                     STATE:
                                                                                                      CURRENT
                                                                  CITY:
                                                                                                                                                               NAME:
                                                                                                                                                                                                   TYPE
        RESULT
PCT-US
                                 ф
;
                                                         20
                                                                 120
                                                                                 178
                                                                                         238
                                                                         178
                                                                                                  238
                                                                                                                                                  59
                                                                                                                                                          472
                                                                                                                                                                  419
                                                                                                                                                                          532
                                                                                                                                                                                          592
                                                                                                          294
                                                                                                                  294
                                                                                                                          354
                                                                                                                                  24
                                                                                                                                          414
                                                                                                                                                                                  σ
                                                                                                                                                                                                   539
                                                                                                                                                                                                           652
                                                                                                                                                                                                                   599
                                                                                                                                                                                                                            711
                                                                                                                                                                                                                                   629
                                                                                                                                                                                                                                            771
                                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                                                                            831
                                                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                                                                                             91
                                                                                                                                                                                                                                                                                    σ
                                                 9
                                 bS
                                         0
                                                                                                                                                                                  47
                                                                                                                                                                                                                                                   71
                                                                                                                                                                                                                                                                    17
                                                                                                                                                                                                                                                                                     3
                                         9
                                                                                                                                                                                                                                                                             \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                     \alpha
                                 Ga
                                             SCK
                                                                                                                                         FI
                                                                                                          -PHERRILTILRWLT
                                                                                                                  -WNILLVCCHPSRAEILTILQWLT
                                                                                                                          SYGSPFTPAKRPKRKVAPKRQERPVAP
                                                                                                                                                                          SLNHLLRTNTF
                                                                                                                                                                                                          <u>й —</u>
                                         SG __
                                 0
                                         on.
                         Length
                                 Indel
         .
                                 36
                        ന
                         B
    autotaxin
sequence from
                        Score 4279; D
Pred. No. 0;
3; Mismatches
                         SGHKYGPFGPEES
                                                                                                                              ស
                                                                                                                                                                                                                                                                                             91
    putative
protein s
                                                                                                                                                                                                                                                                                                     8
                                13;
                                                                                                                                                                                                                                                                                             SEI
|---
                        85.3%;
illarity 87.1%;
Conservative
                                                                                                                                                                                                                                                                                            SLFTFAV
                                                                                                                         IFICATION METHOD:
INFORMATION: pu
INFORMATION: pro
                                         MARRSSFQSCQIIS
                       y Match
Local Simila
hes 805; Cc
                                                                                                                         LPDHERPS
||||||||||
LPDHERPS
IDENTIE
OTHER 1
OTHER 1
                        Query Ma
Best Loc
Matches
                                                                                         179
                                                                                                 179
                                                                                                                         295
                                                                                                                                                                  360
                                                                                                         239
                                                                                                                 39
                                                                                                                                                          415
                                                                                                                                                                                  420
                                                 \dashv
                                                                61
                                                                                                                                 295
                                                                                                                                          355
                                                         61
                                                                         121
                                                                                 121
                                                                                                                                                  325
                                                                                                                                                                          m
                                                                                                                                                                                          533
                                                                                                                                                                                                  480
                                                                                                                                                                                                           593
                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                   999
                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                             32
                                                                                                                                                                                                                                                                                    80
                                                                                                                                                                                                                                                                                                     840
                                                                                                                                                                                                                           3
                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                            ~
                                                                                                                                                                                                                                                                                             ~
                                                                                                                                                                          47
                                                                                                                                                                                                                           65
                                                                                                                                                                                                                                                            11
                                                                                                                                                                                                                                                                                             89
            S
                                                                                                                                                                                                                                                                            8
            08
                                                                                 g
                                                 d
                                                                g
                                                                                                 d
                                                                                                                 pp
```

qq

ò

δ

ð

δ

ð

δ

g

ò

d

ğ

d

Q

임

õ

d

d

Q

a

Q

임

ð

d

ö

a

õ

Q

```
CANCER DIAGNOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 autotaxin
....once from human liver
                                                             STRACKE, MARY; LIOTTA, LANCE;
SCHIFFMANN, ELLIOTT; KRUTZSCH
HENRY; MURATA, JUN
VENTION: MOTILITY STIMULATING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36,434
R: 2026-4149US2
                                                                                                                     PROTEIN USEFUL IN
THERAPY
69
                                                                                                                                                                                                                                                                                                                                                  MBER: PCT/US95/06613
24-MAY-1995
                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: Propertion Propertion Properties CURRENT APPLICATION DATA:

FILING DATE: 24-1

PRIOP
ULT 12
-US95-06613-38
------ 38, Application PC/TUS9506613
                                                                                                                                                                                                                                                                                                                                                       FILING DATE.
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/346,455
APPLICATION NUMBER: 28-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 28-NOV-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: 07/822,04
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                               FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       putative
protein s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (212) 758-4800
(212) 751-6849
R SEQ ID NO: 38
                                                                                                                                                                                          r: 345 PARK AVENUE
NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REGISTRATION NUMBER: 36
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (212) 751-684 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IDENTIFICATION METHOD:
                                                                                                                                                  NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy COMPUTER: IBM PC comp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein
                                                                                                                                                                               MORGAN &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OTHER INFORMATION:
OTHER INFORMATION:
CT-US95-06613-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN:
INDIVIDUAL ISOLATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unknown
                                                                                                      TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOROTHY R.
                                                                                                                                                                                                                      NEW YORK: U.S.A.
                                  Sequence 38, Applica GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEVELOPMENTAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: HYPOTHETICAL: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGINAL SOURCE
ORGANISM: Hu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HAPLOTYPE:
TISSUE TYPE:
CELL TYPE:
CELL LINE:
ORGANELLE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE:
                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
```

979

.rai

Best Loc Matches

S

21

δ

61

d

61

Q

d

<del>-</del> თ

21

엄

239

d

39

ð

179

<del>D</del>

179

δ

295

d

S

29

ð

325

d

S

õ

415

δ

360

g

 $\omega$ 

47

Qγ

420

g

ന

Qγ

0

α

d

593

δ

540

g

```
CDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENACHCSEDCLARGDCCTNYO 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 788;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                              IN CANCER DIAGNOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 3842; D
Pred. No. 0;
12; Mismatches
LATES OF AMERICA; DEPT
LITH AND HUMAN SERVICES
MOTILITY STIMULATING
PROTEIN USEFUL IN CTHERAPY
: 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sednence
                     DEPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-tera 2D1 putative
                                                                                                                                                                                                                                                                                                                -4149PCT
                                                                                                                                                                     28-NOV-1994
'N: 530
                                                                                                                                                                                                                  APPLICATION NUMBER: PCT/US95/0661.
FILING DATE: 24-MAY-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
                                                                                                                                                           PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATX protein
                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
                                                                                                                                                                                                                                                                                                NAME: DOROTHY R. AUTH
REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026
TELECOMMUNICATION INFORMATION:
                                                                                MORGAN & FINNEGAN
PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12;
                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC COMPAtible
OPERATING SYSTEM: PC-DOS/MS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              teratocarcinoma
N-tera 2D1
                                                                                                                                                                                                                                                                                                                               (212) 758-4800
(212) 751-6849
R SEQ ID NO: 36
                                                                                                                                                                  WordPerfect 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 76.5%;
85.6%;
                      UNITED STATES
OF HEALTH AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS LENGTH: 788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCATION:
IDENTIFICATION METHOD:
OTHER INFORMATION: N-
                                                                                                                                                                          CURRENT APPLICATION DATA APPLICATION NUMBER: U
                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 24-MAY-
                                                                                                                                                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                   single
                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEVELOPMENTAL STAGE:
HAPLOTYPE:
TISSUE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                             INDIVIDUAL ISOLATE
                                                                                                                                                                                                                                                                                                                                                                                           Unknown
                                     OF INVENTION:
OF INVENTION:
OF INVENTION:
                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                            amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       al Similarity
727; Conserv
                                                                                                        NEW YORK: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                             GY.
TYPE: Pt.
                                                                                                                                                                                                                                                                                                                                                                                                                             Human
                                                                                                NEW YORK
                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGINAL SOURCE
ORGANISM: Hu
                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                       345
                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                         TELEFAX: (; INFORMATION FOR
                                                                                                                       10154
                                                                                                                                                                                                                                                                                                                                                                                                            HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CELL TYPE:
CELL LINE:
ORGANELLE:
                                                                                                                                                                                                                                                                                                                                  TELEPHONE:
                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY:
                                                                                                                                                                    SOFTWARE:
                      APPLICANT:
APPLICANT:
TITLE OF IN
                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -455B
                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 727
                                                                                         STREET:
                                                                                                        STATE:
                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                           TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -08-346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <del>Q</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                             629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 891
                                                                                                                                                                                                                                                                        Φ.
                                                                                                                                                                                                                                                                                        ^{\circ}
                                                                                                                                                                                                                                                                                                         σ
                                                                                                                                                                                                                                                                                                                          2
                                                                                                                                                                                                                                                                                                                                           S)
                                                                                                                                                                                                                                                                                                                                                          ~
                                                                                                                                                                                                                                                                                                                                                                            σ
                                                                                                                                                                                                                                                                                                                                                                                            ~
                                                                                                                                                                                                                                                                                                                                                                                                            σ
                                                                                                                                                                                                                                                                                                                                                                                                                             711
                                                                                                                                                                                                                                                                                                                                                                                                                                                              771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                σ
                                                                                                 120
                                                                                                                                                   38
                                                                                                                                                                   38
                                                                                                                                                                                                                      54
                                                                                                                                                                                                                                       324
                                                                                                                                                                                                                                                       414
                                                                                120
                                                                                                                  \boldsymbol{\omega}
                                                                                                                                   8
                                                                                                                                                                                                     294
                                                                                                                                                                                     94
                                                                                                                                                                                                                                                                                                         41
                                                                                                                                                                                                                                                                                                                                                           59
                                                                                                                                                                                                                                                                                                                                                                                            65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               77
                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                           ~
                                                                                                                                                                                                                                                                                                                                                                            \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                                                                                                                                            σ
                                                                9
                                                                                                                                  17
                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                            ഗ
                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                        LVKKYASERNGVNVISGPIFDYDYDGLHDTEDKIKQYVEGSSIPVPTHYYSIITSCLDFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PHERRILTILRWLT
                                                                                                                                                                                               ö
                                                                                                                                                                                     SWI
                                9
                                                                                                                                                                                     F
                                S
                                                                                                                                                                                    ·- Ÿ
                       O d
                                Mismat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SFILPHRPDNEESCNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                         Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98
                               13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80/SI
                       Local Similarity 87.1%;
nes 805; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \Box
                       87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCDGPLSVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 36, Applicati
Sequent No. 5731167
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QPADKCDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPADKC
| | | | | | |
```

8

Gaps

13 346

SULT

ច្ចល

840

qq

892

Q

720

d

a

17

Q

900

g

ന

65

ğ

999

g

712

δ

780

g

832

δ

-

--

```
a
                                                                                                                    299
                         253
                                      178
                                                    309
                                                                 234
                                                                             369
                                                                                           249
                                                                                                                                  487
                                                                                                                                               359
                                                                                                                                                           547
                                                                                                                                                                         419
                                                                                                                                                                                                   479
                                                                                                                                                                                                                999
                                                                                                                                                                                                                             539
                                                                                                                                                                                                                                          726
                                                                                                                                                                                                                                                       599
                                                                                                                                                                                                                                                                    786
                                                                                                                                                                                                                                                                                 629
                                                                                                                                                                                                                                                                                              846
                                                                                                                                                                                                                                                                                                            719
                                                                                                                                                                                                                                                                                                                         906
                                                                                                                                                                                                                                                                                                                                      779
             æ
                                                                                                       427
                                                                                                                                                                                      607
19
             11
SCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDATFHLRGREKFNHR
                                                                                                                                                                                     WWGGQPLWITATKQGVKAGTFFWSVVI - - - - PHERRILTILRWLTLPDHERPSVYAFYSE
                                                          QPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRKIHRMDHYA
                                                                                                        AETRODKMTNPLREIDKIVGOLMDGLKOLKLRRCVNVIFVGDHGMEDVTCD--RTEFLSN
                                                                                                               --ETMDGRCHMYRTEFLSN
                                                                                                                                 AND
                                                                                                                                                                                                                                                                                                                                                                                                                                        DIAGNOSIS
                                                                                                                                                                                                                                                                                                                                                                                                       STATES OF AMERICA; DEPT.

LIH AND HUMAN SERVICES

T: MOTILITY STIMULATING

T: PROTEIN USEFUL IN CANCER D

S: 69
                                                                                                               --MPNPLREMHKIVGQLMDGLKQLKLHRCVNVIFV-
                                                                                                                                                                                                                                                                                                                                                                                     KESULI 14
US-08-977-221-36
Sequence 36, Application US/08977221
Patent No. 6084069
GENERAL INFORMATION:
APPLICANT: UNITED STATES OF AMERI
APPLICANT: OF HEALTH AND HUMAN SF
TITLE OF INVENTION: MOTILITY STIN
TITLE OF INVENTION: THERAPY
TITLE OF INVENTION: THERAPY
TITLE OF SEQUENCES: 69
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORGAN & FINNEGAN
STREET: 345 PARK AVENUE
CITY: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                US/08977221
                                                                                    NEW YORK
                                                                                                                                                                                                                                                                                                                                                  91
                                                                                                                                                                                                                                                                                                                                                                78
                                                                                                                                                                                                                                                                                                                                                  YLHTYESEI
|||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET:
CITY:
STATE:
                                                                                                       370
                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                780
            61
                                      119
                                                                179
                                                                             310
                                                                                                                    250
                                                                                                                                 428
                                                                                                                                              300
                                                                                                                                                           488
                                                                                                                                                                                      548
                                                                                                                                                                                                  420
                                                                                                                                                                                                               608
                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                 900
                                                                                                                                                                                                                                                                                                           099
                                                                                                                                                                                                                                                                                                                                     720
36
                         194
                                                   254
                                                                                           235
                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                        847
                                                                                                                                                                                                                                                                                                                                                  907
                                                                                                                                                                                                                                          667
                                                                                                                                                                                                                                                                    727
                                                                                                                                                                                                                                                                                              787
                                                                                                                                                                                                                                                                                                                                                                                    RESULT
            g
                                                                g
                                                                             Q_{Y}
                                                                                           d
                                                                                                                     a
                                                                                                                                              d
                                                                                                                                                                         g
                                                                                                                                                                                                   d
                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                g
                         Q
                                                    5
                                                                                                       δ
                                                                                                                                  ð
                                                                                                                                                           ò
                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                ğ
                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                               ŏ
ð
                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                          δ
```

```
309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDNLCKSYTSCCHDFDELCLKTARAWECTKDRCGEVRNEENACHCSEDCLARGDCCTNYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENACHCSEDCLARGDCCTNYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              788;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ж
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDENTIFICATION METHOD:
OTHER INFORMATION: N-tera 2D1 putative
OTHER INFORMATION: ATX protein sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 3842;
Pred. No. 0;
                                                                                                                                                                                                                                                                36,434
R: 2026-4149US3
     MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WordPerfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/977,221
                                                                             , 221
                                                                                                                                                                  APPLICATION NUMBER: 08/249,182 FILING DATE: 25-MAY-1994 PRIOR APPLICATION DATA: APPLICATION NUMBER: 07/822,043 FILING DATE: 17-JAN-1992 ATTORNEY/AGENT INFORMATION:
                                                                                                                             MBER: 08/346,45
28-NOV-1994
                                                                                                                                                                                                                                                NAME: DOROTHY R. AUTH
REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 36:
SEQUENCE CHARACTERISTICS:
LENGTH: 788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  teratocarcinoma
N-tera 2D1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            76.5%;
ilarity 85.6%;
Conservative 1
                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 25-MAY-
                                                                                                    CLASSIFICATION:
IOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                    single
                                                                                                                                                                                                                                                                                                                                                                                                               protein
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                               APPLICATION NUMBER:
FILING DATE: 28-NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEVELOPMENTAL STAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INDIVIDUAL ISOLATE:
                                                                                                                                                                                                                                                                                                                                                                                              Unknown
                                                                                                                                                                                                                                                                                                                                                                        amino acid
                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: UNKNOW MOLECULE TYPE: pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 727; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGINAL SOURCE
                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS
                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HAPLOTYPE:
TISSUE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CELL TYPE:
CELL LINE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM:
STRAIN:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANELLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5-08-977-221-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION
                                                                                                                                                                                                                                                                                                                                                                       TYPE:
                                                                 CURRENT
                                                                                                                     PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \boldsymbol{\dashv}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
```

ώ

כו

Ø

Tu

```
CDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENACHCSEDCLARGDCCTNYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YLTNVDDITLVPGTLGRIRSKFSNNAKYDPKAIIANLTCKKPDQHFKPYLKQHLPKRLHY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRRKIHRMDHYA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  70;
                                                                                                                                                                                                                                                                                                                                                                                                                                 788;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                    40;
                                                                                                                                                                                                                                                                                                                                                                                                                                 .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                 putative
n sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                           ed. No. 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                Score 3842;
Pred. No. 0;
                                                                                                         36,434
R: 2026-4149US2
                                                                                                                                                                                                                                                                                                                                                                                 N-tera 2D1 F
ATX protein
         08/346,455
                                                                    22,04
                                                                                              NAME: DOROTHY R. AUTH
REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 202
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 36:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  12;
                                                                                                                                                                                                                                                                                                             teratocarcinoma
N-tera 2D1
                                                                                                                                                                                                                                                                                                                                                                     IDENTIFICATION METHOD:
OTHER INFORMATION: N-tera
OTHER INFORMATION: ATX pro
                                      MBER: 08/24
25-MAY-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                 76.5%;
                                                                   APPLICATION NUMBER: 07/8:
FILING DATE: 17-JAN-1992
                                                                                    ATTORNEY/AGENT INFORMATION:
                 28-NOV-1994
                                                                                                                                                                   SEQUENCE CHARACTERISTICS LENGIH: 788
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                SS: single
Unknown
                                      APPLICATION NUMBER:
FILING DATE: 25-MAY-PRIOR APPLICATION DATA:
                                                                                                                                                                                                                      protein
                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                       ISOLATE:
TOR APPLICATION DATAPPLICATION NUMBER: FILING DATE: 28-NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OPDFSGHKHMPFGPE
                                                                                                                                                                                         acid
                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
les 727; Conser
                                                                                                                                                                                                                                                    Human
                                                                                                                                                                                                              TOPOLOCAL MOLECULE TYPE: PI
                                                                                                                                                                                                                                                            STRAIN:
INDIVIDUAL ISOI
DEVELOPMENTAL 3
                                                                                                                                                                                                                                       ORIGINAL SOURCE:
ORGANISM: Hum
                                                                                                                                                                                         TYPE: amino a STRANDEDNESS:
                                                                                                                                                                                                                                                                                                  TISSUE TYPE:
CELL TYPE:
CELL LINE:
ORGANELLE:
                                                                                                                                                 TELEFAX: ()
INFORMATION FOR
                                                                                                                                                                                                                               HY POTHETICAL
                                                                                                                                                                                                                                                                                                                                                                                                    CT-US95-06613-36
                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                           HAPLOTYPE
                                                                                                                                                                                                                                                                                                                                                             LOCATION:
                                                                                                                                                                                                                                                                                                                                                     NAME/KEY
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                 419
                                                                                                                                                                                         479
                                                                                                                                                                                                             999
                                                                                                                                                                                                                                539
                                                                                                                                                                                                                                                    726
                                                                                                                                                                                                                                                                       599
                                                                                                                                                                                                                                                                                           786
                                                                                                                                                                                                                                                                                                              629
                                                                                                                                                                                                                                                                                                                                 846
                                                                                                                                                                                                                                                                                                                                                     719
                                                                                                                                                                                                                                                                                                                                                                       906
                                                                                                                                                                                                                                                                                                                                                                                          779
                                                                    299
                                                                                      487
                                                                                                          359
                                                                                                                                                                     607
          369
                             249
                                                                                                                              547
                                                427
```

φ ..

135

9

193

118

178

309

234

369

249

427

487

õ

1,7

```
419
                                 479
                                                                  599
359
                                         999
                                                  539
                                                          726
                                                                          786
                                                                                  629
                                                                                           846
                                                                                                  719
                                                                                                           906
                        607
                                                                                                          HTDFESGYSEIFLMLLWTSYTVSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDK
                                                                         YLTNVDDITLVPGTLGRIRSKFSNNAKYDPKAIIANLTCKKPDQHFKPYLKQHLPKRLHY
300
                360
                                420
                                                                 540
        488
                        548
                                         608
                                                 480
                                                                                  900
                                                                                                  099
                                                         667
                                                                          727
                                                                                          787
                                                                                                           847
                <del>Q</del>
쉽
                                <del>Q</del>
                                                 d
                                                                 g
                                                                                  g
                                                                                                  ద
        ŏ
                        Qγ
                                         Qγ
                                                         ά
                                                                          Qγ
                                                                                          QY
                                                                                                           δ
```

:22:17 13 2001, 23, July completed: me: 370 sec Search com Job time:

788

780

S

91

907

δ

720

d

YLHTYESEI YLHTYESEI Y

779

```
4.5
Compugen Ltd
 GenCore version (c) 1993 - 2000
           Copyright
```

using sw model - protein search, OM protein

Search time 25.97 Seconds (without alignments) 2683.855 Million cell updates/sec 2001, 14:43:22 July 19, Run on:

US-09-483-831-69 5019 1 MARRSSFQSCQIISLFTFAV... score: Sequence: Title: Perfect

Scoring table:

Ŋ 91

.... RSYPEILTLKTYLHTYESEI

0.5 Gapext BLOSUM62 Gapop 10.0

residues 76174552 seds, 219241 Searched:

219241 hits satisfying chosen parameters of Total number

length: 0 length: 2000000000 sed sed Minimum DB Maximum DB Maximum

Post-processing:

Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR. Database

R\_68:\* pir1:\* pir2:\* pir3:\* 1 2 E 4

No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, derived by analysis of the total score distribution. . ⊗ score gand is Pred

ro.	Description	totaxin	plasma cell membra	$\dashv$	plasma cell membra	na cel	ucleot	eotide py	ectide py	hypothetical prote	nucleotide pyropho	probable phophodie	hypothetical prote	este	cal	tinas	pothetical	thetical	chetica	thetical	phodieste	pothetical p	chetical pro	clease NUC1	tical p	rosine prot	potheti	tent transf	ucocorticoi	protein-tyrosine k
SUMMARIES	ID	51	554	708	Ħ	2741	0993	0	0329	1949	0993	4065	3372	8253	1949	4117	1943	5044	309	0993	2527	9	2086	CBYN	349	0318	3618	5549	649	~
	DB	-	Н	-	-	П	~	7	7	7	7	7	~	~	~	7	7	7	7	~	~	7	~	Н	7	~	7	7	7	7
	Length		8	~	a	0	S	496	~	2	9	8	3	$^{\circ}$	~	0	マ	σ	614	സ	96	453	9	2	9	æ	46	1820	45	1374
dР	Query	0.	ر. د	ij	о О	7 .	ά.	•	?	8	3	·	0	•	•	•	•	•	•	•	•	4.7	•	•	•	•	•	•	•	•
	Score	5019	30	08	55.	899.	46.	$\leftarrow$		$\boldsymbol{H}$	0	•	S	Q	•	S	$\overline{}$	35.	•	41.	m.	m	9		45.	4	ന	12	•	N
	Result No.		7	<u>ო</u>	゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙゙	ഹ	9	7	80	თ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29

<u>;</u>

Gaps

ö

Indels

ö

915

Length

DB 1;

Score 5019; Pred. No. 0; ; Mismatches

100.0%; .larity 100.0%; .Conservative 0;

Query Match Best Local Similarity Matches 915; Conser

; 0

MARRSSFQSCQIISLFTFAVGVSICLGFTAHRIKRAEGWEEGPPTVLSDSPWTNISGSCK 60

Н

d

61

a

61

Ω

121

Q

Н

SEDCLARGDCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRASYMK

120

120

180

probable histidine	hypothetical prote	66K glycoprotein p	n precurso	nuclease NUC1 (EC	<ul> <li>hypothetical prote</li> </ul>	sulfite reductase	transforming growt		u-spec	fibrillin 1 precur	fibrillin I - bovi	hypothetical prote	hypothetical prote	vitronectin precur	probable membrane
T03820	T39009	A38340		T11588	S69711	S61342	A35626	T20566	A29637	A47221	A55567	T18674	T28787	SGMSV	S67195
7	7	7	<b>~</b>	~	~	7	7	7	7	7	7	7	7	_	7
4	1888	4	O	S	σ	0	3	σ	3	0	œ	3147	~	ħ	1472
	2.4		•		•	•	•	•	•		•	•	•		•
•		•	11	11	•		-	$\vdash$	-	-	10.	•	11	φ.	09.
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

# ALIGNMENTS

; Description: Cloning and expression of brain-specific nucleotide diphosphohydrolase; Reference number: JU0187; Accession: JU0187; Accession: JU0187; Molecule type: mRNA; Residues: 1-66, 'Q', 68-81, 'T', 83-94, 'C', 96, 'A', 98-195, 'A', 197-514, 'E', 516-621, 'E', 62; Experimental source: strain Sprague-Dawley; Superfamily: nucleotide pyrophosphatase; somatomedin B homology; Keywords: coenzyme A; exonuclease; glycoprotein; phosphoprotein; phosphoric diester; Superfamils: somatomedin B homology <sbh1>; 54-97/Domain: somatomedin B homology <sbh2>; 54-97/Domain: somatomedin B homology <sbh2>; 53,150,396,408,522,608,829/Binding site: carbohydrate (Asn) (covalent) #status predicted</sbh2></sbh2></sbh1>	Query Match  Best Local Similarity  Bases Sore 4306;  Best Local Similarity  Bases Bases No. 1  Matches 792;  Conservative 33;  Mismatch  I MARRSSFOSCOIISLETFAVGVSICLGFTAHRIKR  III:  I	121   SEDCLARGDCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDG	354 PPKKRRKIHRMDHYAAETRODKMTNPLREIDKIVGOLMDGLKQLKLRRCVNVIFVGDHG 41 322MTNPLREIDKTVGQLMDGLKQLKLRRCVNVIFVGDHG 35 414 MEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSKFSNNAKYDPKALIANLTCKKPDQHF 47 [	479 NSMQTVFVGYGPTFKYRTKVPPFENIELYNVMCDLLGLKPAPNNGTHGSLNHLLRTNTF 594 PTMPEEVTRPNYPGIMYLQSDFDLGCTCDDKVEPKNKLDELNKRLHTKGSTE
	da qa	\$\frac{1}{2}\$     \$\fr	3	odies Oy
	361 KIHRMDHYAAETRODKMTNPLREIDKIVGOLMDGLKOLKLRRCVNVIFVGDHGMEDVTCD 42	541 VGYGPTFKYKTKVPPFENIELYNVMCDLLGLKPAPNNGTHGSLNHLLRTNTFRPTMPEEV 60	CDYDGLHDTEDKIKQYVEGSSIPVPTHYYSIITSCLDFTQPADKCD [DYDGLHDTEDKIKQYVEGSSIPVPTHYYSIITSCLDFTQPADKCD [DYDGLHDTEDKIKQYVEGSSIPVPTHYYSIITSCLDFTQPADKCD [DYDGLHDTEDKIKQYVEGSSIPVPTHYYSIITSCLDFTQPADKCD [DYDGLHDTEDKIKQYVEGSSIPVPTHYYSIITSCLDFTQPADKCD [NEESCNSSEDESKWVEELMKMHTARVRDIEHLTSLDFFRKTSRSY [NEESCNSSEDESKWVEELMKMHTARVRDIEHLTSLDFFRKTSRSY [NEESCNSSEDESKWVEELMKMHTARVRDIEHLTSLDFFRKTSRSY [NI	RESULT 2 A55453 plasma cell membrane glycoprotein PC-1, brain specific - rat plasma cell membrane glycoprotein PC-1, brain specific - rat N;Contains: nucleotide pyrophosphatase (EC 3.6.1.9); phosphodiesterase I (EC 3.1.4.1) C;Species: Rattus norvegicus (Norway rat) C;Date: 10-Sep-1991 C;Accession: A55453; JU0187 R;Narita, M.; Goji, J.; Nakamura, H.; Sano, K. J. Biol. Chem. 269, 28235-28242, 1994 A;Title: Molecular cloning, expression, and localization of a brain-specific phosphodie A;Reference number: A55453; MUID:95050605 A;Accession: A55453 A;Molecule type: mRNA A;Residues: 1-885 cNAR> A;Cross references: GB:D28560; NID:9464196; PIDN:BAA05910.1; PID:9464197 R;Narita, M.; Goji, J.; Sano, K.; Nakamura, H. submitted to JIPID, February 1994

• <u>\$</u>

Qy 513 VYKKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLGLK 572	1   1   1   1   1   1   1   1   1   1	RESULT 4 A39216 plasma cell membrane glycoprotein PC-1 - human N;Contains: nucleotide pyrophosphatase (EC 3.6.1.9); phosphodiesterase I (EC 3.1.4.1) C;Species: Homo sapiens (man) C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 05-May-2000 C;Accession: A39216; S21706; S23587; S51030 C;Accession: A39216; S21706; S23587; S51030 R;Buckley, M.F.; Loveland, K.A.; McKinstry, W.J.; Garson, O.M.; Goding, J.W. J. Biol. Chem. 265, 17506-17511, 1990 A;Title: Plasma cell membrane glycoprotein PC-1. cDNA cloning of the human molecule, A;Reference number: A39216; MUID:91009202 A;Reference number: A39216		A;Note: it is uncertain whether Met-1 or Met-53 is the initiator R;Belli, S.I.; Goding, J.W. Eur. J. Biochem. 226, 433-443, 1994 A;Title: Biochemical characterization of human PC-1, an enzyme possessing alkaline ph A;Reference number: S51030; MUID:95094801 A;Reference number: S51030 A;Reference number: S51030 A;Residues: preliminary A;Molecule type: mRNA A;Residues: 1-80 <bel> C;Genetics: A;Genetics: A;Genetics</bel>
OY 809 VEGSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSSFILPHRPDNEESCNSSEDESKWV 868	LLT 3  180  1 Surface antigen RB13-6 - 1  2 Secies: Rattus norvegicus (Nate: 10-Sep-1999 #sequence_1  2 Cession: A57080  2 Siol. Chem. 270, 9849-9855, 1  2 Lle: Affinity purification  2 Seconomber: A57080; MU  2 Seconomber: A57080; MU  2 Sidues: 1-875 < DEI> 2 Coss-references: GB: 247987; 1  2 Shomain: Cytosolic #statu	smembrane #status prediracellular #status preditomedin B homology <sb #s="" (covalent)="" (thr)="" 160;="" 4,594,702,789="" 43.5%;="" <sb="" b="" binding="" homology="" mismatch="" natomedin="" no="" pred.="" servative="" sity="" td=""  =""  <=""><td>117 ACHCSEDCLARGDCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRA 17     ::                                </td><td>QY         279 VIPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKXGPFGPEESSYGSPFTPAKRP         338           : :   :    :                     :                Db         293 SVPYESRIATLLQWLDLPKAERPSFYTIYVEEPDSAGHKSGPVSAG         338           QY         339 KRKVAPKRRQERPVAPPKKRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQL         398           QY         339 KLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSKFSNN         452           QY         453 AKYDPKAIIANLTCKKPDQHFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARRPLD         512           QY         453 AKYDPKAIIANLTCKKPDQHFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARRPLD         512           :         :         :                                               </td></sb>	117 ACHCSEDCLARGDCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRA 17     ::	QY         279 VIPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKXGPFGPEESSYGSPFTPAKRP         338           : :   :    :                     :                Db         293 SVPYESRIATLLQWLDLPKAERPSFYTIYVEEPDSAGHKSGPVSAG         338           QY         339 KRKVAPKRRQERPVAPPKKRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQL         398           QY         339 KLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSKFSNN         452           QY         453 AKYDPKAIIANLTCKKPDQHFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARRPLD         512           QY         453 AKYDPKAIIANLTCKKPDQHFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARRPLD         512           :         :         :

 $\vdash$ 

0 0

2

9 0 ••  $\overline{\phantom{a}}$ マ

> . 0

> 4

~

\_

b

म्य भ्य भ्य

<del>a</del>

δ

δ

d

Ω

d

ŏ

a

ð

a

ð

a

δ

g

 $\mathbf{c}$ 

) (E)

Н

CDNA

```
cell
                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                   hydrola
                                                                                  from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    œ
                                                                                                                                                                                                                                                                                                                                                                                                                                    #status
                phosphodiesterase
                                                                                                                                                                                     CDNA
                                                                                                                                                                                                                                                                                        asma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 237
                                                                                   deduced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                   diester
                                                                                                                                                                                                                                                                                       pl
                                                                                                                                                                                     _{\rm of}
                                                                                                                                       ; PID:g20023
as Glu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               - VIKALQKVDRLVGMLMDGLKDLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --DP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SCKGRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHCSEDCLARGDCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YMKKGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RKVAPKRRQERPVAPPKKRRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLK
                                      05-May
                                                                                                                                                                                                                                                       PID:92002
                                                                                                                                                                                                                                                                                      the
                                                                                                                                                                                                                                                                                                                                                                                                                                   (covalent)
                                                                                                                                                                                     cloning
                                                                                   structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSKFSNNAKY
                                                                                                                                                                                                                                                                                      of
                                                                                                                                                                                                                                                                                                                                                                          Introns: 62/3; 87/1; 126/1; 168/1; 188/2
Superfamily: nucleotide pyrophosphatase; somatomedin B homology
Keywords: coenzyme A; glycoprotein; phosphoprotein; phosphoric (86-126/Domain: somatomedin B homology <SBH1>
127-170/Domain: somatomedin B homology <SBH2>
161,267,323,459,567,624/Binding site: carbohydrate (Asn) (covalent) as (as a site: AMP (Thr) (covalent) as the status predicted
#text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                       form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      37.8%; Score 1899.5; DB 1; 41.0%; Pred. No. 2.4e-122; ive 155; Mismatches 262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FDATFHLRGREKFNHRWWGGQPLWITATKQGVKAGTFFW-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     365;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <del>Q</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                              #
#
                              (covalent)
                                                                                                19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               69
                                                                                                                                                                                                                                                       279
                                                                                                                                                                                                                                                                                                                        388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               802
                                                                                                                                                                                                                                                                              343
                                                                                                                                                                                                                                                                                                   339
                                                                                                                                                                                                                                                                                                                                                                                                               468
                                                                                                                                                                                                                                                                                                                                                                                                                                     514
                                                                                                                                                                                                                                                                                                                                                                                                                                                           526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                574
                                                                                                                     117
                                                                                                                                                                                                                                   283
                                                                                                                                                                                                                                                                                                                                              σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34
                               (Asn)
                                                                                                 Gaps
                                                                                                                                           16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 œ
                                                                                                                                                                                                                                                                                                                                              AKY - DAFLVTNMVPMYPAFKRVWNYFQRVLVKKYASERNGVNVISGPIFDYDYDGLHDTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DKIKQ ---YVEGSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSSFILPHRPDNEESCN
                                                                                                                                           SL
                                                                                                                                                                 CHCSEDCLARGDCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRAS
                                                                                                                                                                             SVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            --SGFHGSDNVFSNMQALFVGYGPGFKHGIEADTFENIEVYNLMCDLLNLTPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NKLDELNKRLHTKGSTEE--RH--LLYGRPAVLYR-TRYDILYHTDFESGYSEIFLMLLW
                                                                                                                    SCKGRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENA
                                                                                                                                                                                                                       YDPKAIIANLTCKKPDQHFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARKPLDVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TSYTVSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YMKKGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPV
                                                                                                                                                                                                                                                                                                    IPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPK
                                                                                                                                                                                                                                                                                                                                                                                           -SKFSNNAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLGLKPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -- DLGCTCDDKVEPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -IEDFQTQFNLTVAEEKIIKHETLPYGRPRVLQKENTICLLSQHQFMSGYSQDILMPLW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PNNGTHGSLNHLLKNPVYTPKHPKEV----HP---LVQCPFTRNPRDNLGCSCNPSILP
                                                                                                                                                                                                                                                                                                                                                                                                              LHRCLNLILISDHGMEQGSCKKYIYLNKYLGDVKNIKVIYGPAARLRPSDVPDKYYS--
                                                                                                                                                                                                                                                                                                                                                                                                                                              FNYEGIARNLSCREPNQHFKPYLKHFLPKRLHFAKSDRIEPLTFYLDPQWQLALNPSE-
                                                                                                                                 carbohydrate
                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSEDESKWVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92
                                                                          Length
                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                          LRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIR---
                                       predicted
                                                                                                                                                                                                                                                                                                                site
                                                                        Score 1955.5; DB 1
Pred. No. 3.5e-126;
); Mismatches 252;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLQSDF
                                                                                                                                                                                                                                                         FDATFHLRGREKFNHRWWGGQPLWITATKQGVKAGTFFW-
      ;104-144/Domain: somatomedin B homology <SBH1>;145-188/Domain: somatomedin B homology <SBH2>;179,285,341,477,578,585,643,700,731,748/Binding;256/Binding site: AMP (Thr) (covalent) #status
                                                                                              150;
                                                                         39.0%;
42.2%;
                                                                                               Conservative
                                                                                     1 Similarity 378; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RKYCG-
                                                                        Query Match
Best Local S
Matches 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              744
                                                                                                                                                                 118
                                                                                                                                                                                                                                                                              284
                                                                                                                                                                                                                                                                                                   280
                                                                                                                                                                                                                                                                                                                        344
                                                                                                                                                                                                                                                                                                                                               340
                                                                                                                                                                                                                                                                                                                                                                                          400
                                                                                                                                                                                                                                                                                                                                                                                                               412
                                                                                                                                                                                                                                                                                                                                                                                                                                                           469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         663
                                                                                                                      28
                                                                                                                                           101
                                                                                                                                                                                       164
                                                                                                                                                                                                             178
                                                                                                                                                                                                                                                         238
                                                                                                                                                                                                                                                                                                                                                                    389
                                                                                                                                                                                                                                                                                                                                                                                                                                     455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 811
```

g

ð

Qγ

g

d

Qγ

a

97

d

Q

mem

u

edict

pr

453

LDKCLNLILISDHGMEQGSCKKYVYLNKYLGDVNNVKVVYGPAARLRPTDVPETYYSFNY

394

9

S

RESULT A27410

g

Q

엄

ð

Qγ

anal

us-09-483-831-69.rpr

Qy 364 RWDHYAAETRODKKTNPLREIDKIVGQLADGLKQIKLRRCYNVIFVGDHGMEDVTCDRTE 423  31	QUBETY MATCH         12.2%; SCOTE 612; DB 2; Length 496;           Best Local Similarity         32.7%; Pred. No. 2.4e-34;           Best Local Similarity         32.7%; Pred. No. 2.4e-34;           Matches 147; Conservative 68; Mismatches 131; Indels 104; Gaps 12;           0y 163 RPPLITESUDGRAGYMKGSKVMPNIEKLRSGCTHSFYPRETFPHITTATIGL 221           1   1:   1   1   1   1   1   1   1   1
QY 458 KAITANLICKKPDQHFKPYLKQHLPKRLHYANNRRIEDIHLLYDERRHHVARKPLDVYKKP 517	T09932 T09932 T09932 Riberies: Arabidopsis thaliana (mouse-ear cress) Cipacies: Total 1999 #sequence_revision 16-Jul-1999 #text_change 15-oct-1999 Cipacesion: T09323 Riberiance to the Protein Sequence Database, June 1999 Riberiance number: 216897 Riberiance number: 218897 Riberiance num

```
RESULT 10
T09933
nucleotide pyrophosphatase homolog T16L4.210 - Arab
C; Species: Arabidopsis thaliana (mouse-ear cress)
C; Date: 16-Jul-1999 #sequence_revision 16-Jul-1999
C; Accession: T09933
R; Bevan, M.; Rose, M.; Hempel, S.; Entian, K.D.; Ba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AV-LYRTRYDILYHTDFESGYSEIFLMLLWTSYTVSKQA-
                           392/1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -LKCSGNVSAETLNQL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -LNAKYQSNCPSHIPTGSLTIRQNSQ---
                              • •
                            272/3
                                                                      Score (Pred. 1
                                                                                                127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KWVEELMKMHTARVRDIEHLTSLDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          :: :|| : |:| :- - | : | -- - ILLDYTATIFDVERISGFQF
                            176/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LLKVLDPLQAKSMEYLNKFGKMY
                                                                     ch
11 Similarity 23.9%;
192; Conservative 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LTSCVRPDVRVSPSFSQNC--
                                                                                                                                                                                                                                                PLW-ITATKQGVKAGTFFW-
                             100/3;
                                                                                                                                                                                                                                                                                                                         || : | :||
RPGLITAYLHEPDNAGH-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NIPLY SDNHCFQNYCD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NVIGECPMIAFPSV-
                           37/1;
A; Gene: CESP:C27A7
A; Map position: 5
A; Introns: 12/3; 3
                                                                                                                                                                                                                                                                                                                                                                                 -xovD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EVTRP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FTF-
                                                                      Query Match
Best Local S
Matches 192
                                                                                                                                139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           866
                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   810
                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           750
                                                                                                                                                                                        199
                                                                                                                                                                                                                    213
                                                                                                                                                                                                                                                 259
                                                                                                                                                                                                                                                                            272
                                                                                                                                                                                                                                                                                                                                                                                                                                                    397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       788
                                                                                                                                                            158
                                                                                                                                                                                                                                                                                                                                     332
                                                                                                                                                                                                                                                                                                                                                                                              349
                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                             d
                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                   ζ
                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                 ΩY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                         Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hypothetical protein C27A7.1 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C;Accession: T19494
R;Harris, B.
submitted to the EMBL Data Library, October 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CESP:C27A7
                                                                                                                                                                                                                                                                                                                                                                                                                                        185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  412
                                                                                                                                                                                                                                                                                                                                                                                128
                                                                                                                                                                                                                                                                                                                                                                                                            263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      521
                                                           -199
                                                                                                                                                                                                                                                                                                                                                   \alpha
                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                   20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRKIH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     --AITEAVVRIDEMIGRLIAGLEERGVFEDVNVILVGDHGMVG-TCDKKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -TEFLSNYLTNVDDITLVPGTLGRIRSKFSNNAKYDPKAII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ANLTCKKPDQHFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARKPLDVYKKPSGKC
                                                                                                                                                                                                                                                                                                                                                     -PPLIIFSVDGFRASYMKKGSKVMPNIEKLRSCGTHSPY-MR
                                                                                                                                                                                                                                                                                                                                                                                                            PVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDATFHLRGREKFNHRWWGGQPLWIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----SVVIPHERRILTILRWLTLPDHERPSV
                                                                                                                                                                                                                                                                                                                                                                                LSAAPAPAAAARAQVKLEKPVVILISSDGFRFGYQHKAA--TPHIHRLIGNGTSAATGLV
                                                                                                                                                                                                                                                                                                                                                                                                                            AADQGIQAATYFWPGSEVKKGSWDCPDKYCRHYNGSVPFEERVDAILGYFDLPSDEMPQF
                                                           24-Mar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RMDHYAAETRODKMTNPLREIDKIVGOLMDGLKOLKLRRCVNVIFVGDHGMEDVTCDR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---GAHGYDNAFFSMRTIFIAHGPRFEGGRVVPSFENVEIYNVIASILNLEPAPNNGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----GEYLRMYLKEDLPSRLHYADSYRIPPIIGLPEEGYKVEMKRSD--KNECG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLGLKPAPNNGT
                                                                                                                                                                                                                                                                                                                        131;
                                                                                                                                                                                                                                                                                             479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GSPDB:GN00023;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              change
                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                      EMBL:U25430; NID:9818848; PID:9818849
ce: strain Tainung 67
                                                                                                                                                                                                                                                                                                             -34;
132;
                                                                                       Chen,
                                                                                                                                                                                                                                                                                          Score 611.5; DB Pred. No. 2.5e-34 pred; Mismatches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from GB/EMBL/DDBJ
                                                                                                                                                            from GB/EMBL/DDBJ
                                                         #sequence_revision 24-Mar-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Status: preliminary; translated from GB/EMBL/DDI
A; Molecule type: DNA
A; Residues: 1-829 <WIL>
A; Cross-references: EMBL: Z81041; PIDN: CAB02784.1;
A; Experimental source: clone C27A7
C; Genetics:
                                                                                     Chow, T.; Hsieh, J.;
Library, April 1995
embryogenesis gene.
                               rice
                                                                                                                                                                                                                    A; Experimental source: strain Tainung
                         nucleotide pyrophosphatase homolog - C; Species: Oryza sativa (rice)
C; Species: Oryza sativa (rice)
C; Date: 24-Mar-1999 #sequence_revisic
C; Accession: T03293
R; Hsing, Y.C.; Tsao, C.V.; Chow, T.; submitted to the EMBL Data Library, A; Description: Rice early embryogene; A; Reference number: 214889
A; Reference number: 214889
A; Accession: T03293
A; Status: preliminary; translated from A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                       65;
                                                                                                                                                                                                                                                                                          12.2%;
ilarity 31.4%;
Conservative 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LTLYFEDPDHQGHQVGPDDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATKOGVKAGTFFW----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    submitted to the EMBL Data
A; Reference number: 219132
A; Accession: T19494
                                                                                                                                                                                                                                                                                                                                                     IKAAECPAGFVR--
                                                                                                                                                                           type: mRNA: 1-479 <HSI>
                                                                                                                                                                                                                                                                                                        Local Similarity
nes 150; Conser
                                                                                                                                                                                       A;Residues: 1-479 <FA;Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EN--
                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 150
  \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                                                                                                                71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                186
                                                                                                                                                                                                                                                                                                                                                   152
                                                                                                                                                                                                                                                                                                                                                                                                            204
                                                                                                                                                                                                                                                                                                                                                                                                                                        129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          413
 RESULT
T03293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                a
a
                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ДQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Óζ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
```

```
1/1/9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  K.D.; Bancroft, I.; Mewes, H.W.; Mayer
                                                                                             31
588/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               809
                                                                                                                                                                                                             258
                                                                                                                                                                                                                                                                                          299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               787
                                                                                                                                   KGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRASYMKKGSKVMPNIEKLRSCGTH 19
12;
                                                                                                                                                                                                                                                                                                                  |:| : :|| :: | :|| : | DKTYYFQDYL-DLKGLITAKGVVGRV---YINDTTISVNDVVDKFRCK--IDTVKTNTRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -- NSVIVSRKGNDARRAIIEVLSRDEASNPSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EGSSIPVPTHYYSIITSC----LDFTQPADKCDGPLSVSSFILPHRPDNEESCNSSEDES
                                                                                                                                                       SPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDATFHLRGREKFNHRWWGGQ
                                                                                                                                                                                                                                : : | ||:|||||| |:: |||||||| ||::||
ADKVYPSYPSKTFPNHYSIVTGLWPESHGITDNSVFDPTISPVLESMKSTKY-EKFFEGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DRTEFLSNYLTNVDDITLVPGTLGRIRSKFSNNAKYDPKAIIANLTCKKPDQHFKPYLKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----LAYKNDKQMSYGFLFPPYLSSSPEAKYDA---F
                                                                                                                                                                                                                                                                                             -SVVIPHERRILTILRWLTLPDHE
                                                                                                                                                                                                                                                                                                                                                                       RPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                RKIHRMDHYAAETRODKMTNPLREIDKIVGOLMDGLKOLKLRRCVNVIFVGDHGMEDVTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---EEDVDEKLAEIDENLDYLMSRLSEEKLLECINFAILSDHGMQLI--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HLPKRLHYANNRRIEDIHLLVERRWHVARKPLDVYKKPSGKCFFQGDHGFDNKVNSMQTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FVGYGPTFKYKTKVPPFENIELYNVMCDLLGLKPA-PNNGTHGSLNHLLRTNTFRPTMPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --NYPGIMYLQSDFDLGCTCDDKVEPKNKLDELNKRLHTKGSTEERHLLYGRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SVKLTNCAFSPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          - LSSMVDERIDVPNNF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LVTNMVPMY PAFKRVWNY FQRVLVKKY ASERNGVNV ISGPIFDYDYDGLHDTEDKIKQYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NGSVI ---THIYRIMLICNSTWLLMNPPLCTDSDSMDTLSFIFPITEQSTIDCMSSDD
566,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                change-
479/2
                                                          829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -VISGTATDINHDGIADS
                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Arabidopsis
 427/1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #text_
                                                       ore 610; DB 2;
ed. No. 6.5e-34;
Mismatches 278;
```

_ 🗅	166 LIIFSVDGFRASYMKKGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPES : :  :      : :
461 461 ace	DD 76 VIVISLDGFRADYLYRGFTPNLLSLAERNVHVPFLIPSFPSITFPNHYTIVTGLYPES 133  QY 226 HGIVGNSMYDPVFDATFHLRGREKFNHRWWG-GQPLWITATKQGVKAGTFFWSVVI 280            : :       : :       : :       :         :
tics: : ATSP:T16L4.210 position: 4	QY 281 PHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPE 324 
Query Match Best Local Similarity 31.9%; Pred. No. 3.5e-34; Matches 145; Conservative 78; Mismatches 127; Indels 104; Gaps 12;	Qy 325 ESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRRKIHRMDHYAAETRQDKMTNPLREI 384 : :: : Db 253LNIIIQEV 260
163 RPPLIIFSVDGFRASYMKKGSKVMPNIEKLRSCGTHSPY-MRPVYPTKTFPNLYTLATGL 221 : :::	Qy 385 DKIVGQLMDGLKQLKLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTL 442   :: : ::    : :       ::
222 YPESHGIVGNSMYDPVFDATFHLRGREKFNHRWWGGQPLWITATKQGVKAGTFFW 276	QY 443 GRIRSKFSNNAKYDPKAIIANLTCKKPD-QHFKPYLKQHLPKRLHYANNRRIEDIHLLVE 501     : : :     :::     :::
277SVVIPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPF 321 :::      ::     :	Qy 502 RRWHVARKPLDVYKKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTFK-YK 550   :
322 GPEESSYGSPFTPAKRRKVAPKRRRRQERPVAPPKKRRRKIHRMDHYAAETRQDKMTNPL 381    ::  :: 231 DPRVTTAV 238	Qy 551 -TKVPPFENIELYNVMCDLLGLKPAPNNGTH-GSLNHLLRTN 590  :   :  :  :            :      D
382 REIDKIVGQLMDGLKQLKLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGT 441 :  :: ::     ::  :   :      :  :  :    239 SRVDKMIGRVIKGLKQREIFDEVHVILLGDHGMV-TNCECNE-KAIYIDDLADWIKIPAA 296	
442LGR-IRSKFSNNAKYDPKAIIANLTCK-KPDQHFKPYLKQHLPKRL 485	colein - Lymomonas modilis omonas mobilis -1999 #sequence_revision 29-0c 33724
486 HYANNRRIEDIHLLVERRWHVARKPLDVYKKPSGKCFFQGDHGFDNKVNSMQTVFVGYGP 545  :::    :   :	R; Lee, J.S.; Jin, S.J.; Kang, H.L.; Kang, H.S. submitted to the EMBL Data Library, August 1998 A; Description: Sequence analysis of 67E10 cosmid clone of Zymomonas mobilis ZM4. A; Reference number: Z21392
546 TFKYKTKVPPFENIELYNVMCDLLGLKPAPNNGT 579                 ::     :	A; Accession: T33/24 A; Status: preliminary; translated from GB/EMBL/DDBJ A; Status: preliminary; translated from GB/EMBL/DDBJ A; Molecule type: DNA A; Residues: 1-429 < LEE> A; Residues: 1-429 < LEE> A; Cross-references: EMBL: AF086791; NID: 93820581; PID: 93089614; PIDN: AAC70363.1
1 phophodiesterase-nucleotide pyrophosp hatase precurs : Schizosaccharomyces pombe	Query Match Best Local Similarity 29.2%; Pred. No. 3e-28; Matches 127; Conservative 63; Mismatches 153; Indels 92; Gaps 11;
sion: T40657 M.; Rajandream, M.A.; Barrell, B.G.; Rieger, M. ed to the EMBL Data Library, November 1998	Qy 163 RPPLIIFSVDGFRASYMKKGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLY 222 :    :  :       : :    : :
T40657  Teliminar  Type: DNA	OY 223 PESHGIVGNSMYDPVFDATFHLRGREKFNHRWWG-GOPLWITATKOGVKAGTFFW 276  :
s: 1-403 < Lin/ eferences: EMB ental source: 5:	Qy 277SVVIPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGP 320 
osition: 2	321 FGPEESSYGSPFTPAKRKVAPKRRQERPVAPPKKRRKIHRMDHYAAETRQDKMTNP
10.7%; Score 539.5; DB 2; Length 485; 29.2%; Pred. No. 2.2e-29; tive 77: Mismatches 141: Indels 109: Gans	LKLRRCVNVIFVGDHGMEDV
s 135; Conservative //; Mismatches 141; Indels 10	:  :      :         :         :

482	Db 225 AIGRLIDSLRQHGKLTDTDVIVVSDQGIAPIPGDHAVPLERIVQLSDVHVVSDGQVLGIT 284
	387 IVGQLMDGLKQLKLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDIT
Qy 549 YKTKVPPFENIELYNVMCDLLGLK-PAF     : ::  :       	
Db 378 GDIIIEGKP-GTS	SYGSPFTPAKRPKRKVAPKRROERPVAPPKKRRKIHRMDHYAAETRODKMTNPLREIDK 38
井	QY 280IPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEES 326   ::       ::          Db 157 GTRPSRWYAYNKHISADTQITQALRWLNERGPDAPRLVILRFEQVNTAGNSFGPDSPQ 214
Db 323 GLVLSKGVVARIHLNETDRSIDEVA	30 HGIVHNIMEDPLEGA-FESENQEAISDGKWWGGEFIWVSAEHAGIHSAIFLWFGSEASIA
Qy 434 DITLVPGTLGRIRSKFSNNAKYDPKAII	Qy 226 HGIVGNSMYDPVFDATFHLRGREKFNH-RWWGGQPLWITATKQGVKAGTFFWSVV 279
Db 266 IDTVNQELEEVNNYIDILMKALHDENLE	40 LELILOGEKADALERGQAPQLAKLASDGVHALWMIPSYPALILPNAYILLIGEKPDH 97
Qy 374 QDKMTNPLREIDKIVGQLMDGLKQLKLF	AN TITITION TO THE SAME OF A STANDARD STANDARD SAME OF THE SAME OF
Db 252	matches 123; Conservative 03; Mishatotones 132; Indeis 120; Gaps
QY 314 SGHKYGPFGPEESSYGSPFTPAKRPKRR	<pre>core 461; DB 2; Length 433; red. No. 4.6e-24; winntaken 157; Tadele 120; Care</pre>
:  :  :       220 PIW-SAYKRLTGNRVHCLFW	
Qy 259 PLWITATKQGVKAGTFFWSVVIPHER	ene
:   : !       :   :	rence number: A59328 ents: annotation
QY 200	uthors: da Silva, A.C.R.; da Silva, F.R.; da Silva, A.M.; Sil Tsuhako, M.H.; Vallada, H.; Van Sluys, M.A.; Verjovski-Almei
OY 141 ESHWVDDDCEEIKAAECPA-GFVRPPL1	thors: Martins, E.M.F.; Matsukuma, A.Y.; Menck, C.F.M.; Mira 3.; Nunes, L.R.; Oliveira, M.A.; de Oliveira, M.C.; de Olive igues, V.; Rosa, A.J. de M.; de Rosa Jr., V.E.; de Sa, R.G.;
Query Match Best Local Similarity 23.8%; Pred Matches 170; Conservative 104; M	June 2000 .C.A.; Ferro, J.A.; Fraga, Kemper, E.L.; Kitajima, J A.M.B.N.; Madeira, H.M.F.;
A; Introns: 61/1; 98/3; 191/1; 220/3; 2	npson, A.J.G.; Reinach, F.C.; Arruda, P.; Abrenes, M.R.S.; Bueno, M.R.P.; Camargo, A.A.; Cameto, E.; Docena, C.; El-Dorry, H.; Facincani,
C;Genetics: A;Gene: CESP:C27A7.3 A;Map position: 5	sidues: 1-433 <sim> oss-references: GB:AE004067; ( oerimental source: strain 9a50</sim>
A; Experimental source: clone C27A7	atus: prelimin lecule type: D
A;Status: preliminary; translated from A;Molecule type: DNA A;Residues: 1-674 <wil></wil>	<pre>ference number: A82515; MUID:20365717 te: for a complete list of authors see reference number session: B82537</pre>
submitted to the EMBL Data Library, Oc A;Reference number: Z19132 A:Accession: T19495	onymous, The Xylella fare 406, 151-157, 2000
C;Date: 15-Oct-1999 #sequence_revision C;Accession: T19495 R:Harris, R	ecies: Xylella fastidiosa ce: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 20-Aug-2000 cession: B82537
T19493 hypothetical protein C27A7.3 - Caenorl C;Species: Caenorhabditis elegans	ut 13 37 phodiesterase
RESULT 14	398 E
OY 349 ININVERFENTELINVECTURED FAR	
327	:   :   :   :   :   :   :   :   :
Qy 496 IHLLVERRWHVARKPLDVYKK	501 ERRWHVARKPLDVYKKPSGKCFFQGDHG
285	
OV 437 LVPGTLGRIRSK-FSNNAKYDPKAIIAN	

٥,

```
35;
                                                                                                                                                                                                                                                                                                        537/1;
                                                                                                                                                                                                                                                          ٣.
                                                                                                                                                                    on 15-Oct-1999 #text_change 15-Oct-1999
                                                                                                                                                                                                                                                          N:CAB02785.1; GSPDB:GN00023; CESP:C27A7
LIIFSVDGFRASYMKKGSKVMPNIEKLRSCGTHS 199
                                                                                                                                                                                                                                                                                                                                                                                                                  258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        909
                                                                                                                                                                                                                                                                                                                                                                                      664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 517
                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                         268/3; 340/1; 392/2; 475/2; 496/3;
                                                                                                                                                                                                                                                                                                                                                                                                                  HGIVGNSMYDP-VFDATFHLRGREKFNHRWWGGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVD
| |||::|||||::
|LECVNLVIVSDHGMQAL---NNSIEVETIVNMD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RKVAPKRROERPVAPPKKRRRKIHRMDHYAAETR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ERRILTILRWLTLPDHERPSVYAFYS -- - EQPDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KCFFQ-----GDHGFDNKVNSMQTVFVGYGPTFK
                                                                                                                                                                                                                                                                                                                                                                                                                             --VGCYYNITGYMPD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----KER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ELNK-RLHTKGSTEERHL-LYGRPAVLYRTRYDI
                                                                                                                                                                                                                                                                                                                                                        211;
                                                                                                                                                                                                                                                                                                                                   Length 674;
                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HDLKKLSLHLENCKEHQNLPIYSK-
                                                                            ore 456.5; DB 2; ed. No. 1.7e-23; Mismatches 230;
                                                                                                                                                 rhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --VSPDYNQELPL----
                                                                                                                                                                                                                              om GB/EMBL/DDBJ
                                                                                                                                                                                                October 1996
```

588/1

us-09-483-831-69.rpr

į		QY 452 NAKYDPKAIIANLTCKKPDQHFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARKPL 511
G 5	000 LINIDEESGISELFLMLLWISITVSKQAEVSSVPDHLTSCVRPDVRVSPSFSQN /18    -	:   :   :
Qy Ob	9 CLAYKNDKQMSYGFLFPPYLSSSPEAKYDAFLVTNMV   ::	QY 512 DVYKKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLGL 571 : :
Qy	6 PMYPAFKRVWNYFQRVLVKKYASERNGVNVISGPIFDYDYDGLHDTED 803 :   :     :     :     :	572 KPAPNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLQSDFDLGCTCDDKVEPKNKL           221 TPAPNNGTH
RESU		QY 632 DELNKRLHTKGSTEERHLLYGRPAVLYRTRYDILYHTDFESGYSEIFLMLLWTSTTVSKQ 691  Db 230 230
Proi N;A	nase PC-1 (EC 2.7.1) - bovine (fragments) names: MAFP; major acidic fibroblast growth factor-stimula Bos primigenius taurus (cattle)	QY 692 AEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKY-DAFL 750  1
A K C H	May-1992 #Sequence_revision 2 1: A41179; A49308 Kuo, M.D.; Huang, S.S.; Huang 1em. 266, 16791-16795, 1991	Qy 751 VTNMVPMYPAFKRVWNYFQRVLVKKYASERNGVNVISGPIFDYDYDGLHDTEDKIKQYVE 810 
A; T. A; R¢ A; A¢	ne plasma cell membrane gl number: A41179; MUID:913 n: A41179	811 GSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSFILPHRPDNEESCNSSEDESKWVEE
A; M. A; Re	type: protein 1-26,36-56,59-6	Db 268HESLWVEE 275
A; E; OC A; T;	tal source: liver Kuo, M.D.; Huang, S.S.; Huang, J.S. Lem. 268, 27318-27326, 1993 Le major acidic fibroblast growth factor (aFGF)-stimu	Oy 871 LMKMHTARVRDIEHLTSLDFFRK 893  : :    :
est A; R( A; A( A; M(	tivities. number: A49308; MUID:94086550 : A49308 tvoe: protein	Search completed: July 19, 2001, 14:45:54
A; R	27-35,'X',37-58	
7	uence extracte ly: nucleotide glycoprotein; in: somatomedi g site: AMP (T	
Õää	Query Match Best Local Similarity 18.7%; Pred. No. 6.3e-24; Matches 150; Conservative 45; Mismatches 86; Indels 522; Gaps 14;	
Qy Db	107 RCGEVRNEENACHCSEDCLARGDCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPL 166	
Qy Db	167 IIFSVDGFRASYMKKGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESH 226 	
QY Db	227 GIVGNSMYDPVFDATFHLRGREKFNHRWWGGQPLWITATKQGVKAGTFFW 276     :       :       :	
Qy	7SVVIPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSP	
Q	84 FPDIXXVSVFFEEKILALLKWLQLP	
G Q	6	
QV	392 MDGLKQLKLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSKFSN 451  :      : :  :        :  :	

us-09-483-831-69.rpr

```
GenCore version 4.5
(c) 1993 - 2000 Compugen Ltd.
                 Copyright
```

- protein search, using sw model OM protein

Search time 16.91 Seconds (without alignments) 1853.564 Million cell updates/sec July 19, 2001, 14:44:18; Run on:

Title: Perfect score:

US-09-483-831-69 5019 1 MARRSSFQSCQIISLFTFAV.....RSYPEILTLKTYLHTYESEI Sequence:

915

BLOSUM62 Gapop 10.0 Scoring table:

93435 seqs, 34255486 residues , Gapext 0.5 Searched:

93435 hits satisfying chosen parameters: Total number of

seq length: 0 seq length: 2000000000 Minimum DB Maximum DB

Post-processing: Minimum Match 0% . Maximum Match 100% Listing first 45 summaries

SwissProt\_39:\* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	sscription	22413 homo sapien	6802 mus mus	353	9997 saccharomy	539	8466 saccha	164	4348 caenor	4207	1203 cunnin	2458	480 schizosa	2898 saccharo	2064	8447	2080 drosophi	5555 homo sapi	8600 mus muscu	9788	8133	1975	2697 saccharo	1204	3710 schizosa	0	8231 s	12	H	607	7746 paracentr	0039 gallus	4821 homo sa	2105 homo sa
	De							<u>P</u>	7		<u>~</u>			P		<u>Д</u>	P1	Ь	8	P2	Р9		<u>0</u>		01	þ4	P4	P1	90		02	Pl	P2	<b>P</b> 2
SUMMARIES	ID	PC1_HUMAN	PC1_MOUSE	6_YEA	YEB6_YEAST	PPD1_BOVIN	NUC1_YEAST	LRP2_HUMAN	LT23_CAEEL	YDT2_SCHPO	-1	ا رج	NUC1_SCHPO	YD30_YEAST	TGFB_HUMAN	(1)	ITA2_DROME	FBN1_HUMAN	1	Ī	- 1	- 1	ွ၊	ᆌ	2	STC_DROME	YNI7_YEAST	- 1	FBN1_MOUSE	1		_ I	- 1	TENX_HUMAN
	DB	}	П	Н	Н	Н	-	Н	Т	-	Н	Н	П	<b>~</b>	Н	٦	Н	-	<del>, -1</del>	-1			-	-	-	Н	Н	<b>~</b>	<b>~</b>	-	-	-	<b>-</b>	-
	T)	873	7	4	ф	9	S	65	S	88	S	~	ന	86	$\boldsymbol{\sigma}$	29	g)	87	Ġ,	47	~	75	_	32	90	10	17	20	87	60	61	1808	20	28
ď		39.0	7	•	6.7	•	•	•	•	•	•	•	•	•	•	•	•	•			•		•	•		•		•	•	•	•	•	•	
	SC	1955.5	899.	Н	335.5	23	•	$\alpha$	$^{\circ}$	12	•	19.	_	•	7		$\vdash$	11	10.	-	10.	11	•	08.	0	$\circ$	0	0	0	10	05	•	04.	04.
	sul No		7	m	4	ហ	9	7	80	თ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	е е

P38934 saccharomyc	P18791 streptococc	P13677 drosophila	P33538 neurospora			Q03376 chironomus		esch	P04412 drosophila	.008890 mus muscala	P14738 staphylococ
BFR1_YEAST	AMIA_STRPN	KPC2_DROME	DPOM_NEUIN	NUCG_HUMAN	P100_HSV7J	BAR3_CHITE	PP11_HUMAN	FHUA_ECOL1	EGFR_DROME	IDS_MOUSE	FNBA_STAAU
Н	Н	<del>, ,</del>	-	Н	-	-	-	<del></del>	-		-
470	629	700	696	297	755	1700	369	747	1426	563	1018
2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0
104	104	104	104	103.5	103	103	102.5	102.5	102.5	102	102
34	35	36	37	38	39	40	41	42	43	44	45

## ALIGNMENTS

STANDARD; PRT; 873 AA.  994681, 995 (Rel. 19, Last sequence update) 991 (Rel. 19, Last sequence update) 900 (Rel. 39, Last sequence update) 901 (Rel. 19, Last sequence update) 901 (Rel. 19, Last sequence update) 902 (Rel. 19, Last sequence update) 903 (Rel. 30, Last sequence update) 904 (Rel. 30, Last sequence) 105 (WPRASE) 105 (WPRASE) 105 (WPRASE) 106 (WRAPASE) 107 (WPRASE) 108 (WPRASE) 108 (WPRASE) 109 (WPRASE) 109 (WPRASE) 109 (WPRASE) 109 (WPRASE) 109 (WPRASE) 109 (WRAPASE) 100 (WRA
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

 $\mathbf{T}^{\mathbf{T}}$ 

```
al
e/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \overline{\phantom{a}}
                   announc
    commerci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                PROTEIN)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           : |: :| :|| |||||:|
-VIKALQRVDGMVGMLMDGLKELN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                l for costb.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YMKKGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RKVAPKRRQERPVAPPKKRRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLK
                                                                                                                                                                                                                                         Hydrolas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SCKGRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -NCRCDAACVELGNCCLDYQETCIEPEHIWTCNKFRCGEKRLTRSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHCSEDCLARGDCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PAKRPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KFSNNAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R (TYPE-II MEMBRANE F
R (POTENTIAL).
B LIKE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11
 and
sb-si
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSP
                                                                                                                                                                                                                                       Signal-anchor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                 WWW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRC6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIR
                                                                                                                                                                                                                                                              CYTOPLASMIC (POTENTIAL)
SIGNAL-ANCHOR (TYPE-II
EXTRACELLULAR (POTENTIA
    Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               http://
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -- ·- ·-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -VAR_008873.
                                                                                                                                                                                                                                                                                                                                              (GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                     (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FFW
                                                                                                                                                                                                                                                                                                     SOMATOMEDIN-B SOMATOMEDIN-B SOMATOMEDIN-B N-LINKED (GLCN/N-LINKED (GLCN/N-LINKED)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ù
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ore 1955.5;
ed. No. 1.5e
Mismatches
    removed
                                                                                                                                                                                                                                       cation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FDATFHLRGREKFNHRWWGGQPLWITATKQGVKAGT
 and this statement is not remover requires a license agreement (an email to license@isb-sib.ch)
                                                                                                                                                InterPro; IPR001212; -.
InterPro; IPR002591; -.
Pfam; PF01663; Phosphodiest; 1.
Pfam; PF01033; Somatomedin_B; 2.
PRINTS; PR00022; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDIN_B; 2.
Glycoprotein; Transmembrane; Duplica Polymorphism.
DOMAIN 1 24 CYTOPLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    core
                                                                                   TINI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FTI
87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5; Sc
5; P<sub>3</sub>
150;
                                                                                    ALT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ž.
                                                                                               :
:::
                                     L; M57736; AAA63237.1;
L; D12485; BAA02054.1;
L; D12485; BAA02053.1; F
L; AF067177; AAD38420.1;
L; AF067178; AAD38421.1;
; A39216; A39216.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                 σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \boldsymbol{\sigma}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SCKGRCFE-RTFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA
                                                                                                                                                                                                                                                                873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        : |: |
MNASF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           378;
                                                                                                                                                                                                                                                                                                                                  CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                             TRANSMEM
DOMAIN
  modified
entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                             send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                EMBL;
EMBL;
EMBL;
                                                       EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            417
                                                                                                                          PIR
MIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query
Best 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
  FT
FT
FT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        臼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
```

```
640
                                                                                                                                                                              698
                                                                                                                                                                                                                                 758
                                                                                                                                                                                                                                                          859
                                                                                                                                                                                                                                                                                817
                        530
                                                  628
                                                                                                                                                      743
                                                                                                                                                                                                        802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .W.;
amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            structure deduced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cell
                                                                                                                                                                                                                    AKY-DAFLVTNMVPMYPAFKRVWNYFQRVLVKKYASERNGVNVISGPIFDYDYDGLHDTE
                                                                                                                                                                                                                                                                      --SGFHGSDNVFSNMQALFVGYGPGFKHGIEADTFENIEVYNLMCDLLNLTPA
                                                                                                                  --IEDFQTQFNLTVAEEKIIKHETLPYGRPRVLQKENTICLLSQHQFMSGYSQDILMPLW
                                                                                                                                                      TSYTVSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPE
                                                                                                                                                                    KKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLGLKPA
                                                  -- DLGCTCDDKVEPK
                                                                                                     NKLDELNKRLHTKGSTEE--RH--LLYGRPAVLYR-TRYDILYHTDFESGYSEIFLMLLW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mu
                                                                                                                                                                                                                                                                                                                                      872
                                                               -HP---LVQCPFTRNPRDNLGCSCNPSILP
                                                                                                                                                                                                                                                                                                             914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PARTIAL SEQUENCE.
MEDLINE=85056299; PubMed=3917281;
Stearne P.A., van Driel I.R., Grego B., Simpson R.J., Goding J.
"The murine plasma cell antigen PC-1: purification and partial acid sequence.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          M.;
cloning
                                                                                                                                                                                                                                                                                                                           P06802;
01-JAN-1988 (Rel. 06, Created)
01-AUG-1991 (Rel. 19, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
PLASMA-CELL MEMBRANE GLYCOPROTEIN PC-1 [INCLUDES: ALKALINE PHOSPHODIESTERASE I (EC 3.1.4.1); NUCLEOTIDE PYROPHOSPHATASE (EC 3.6.1.9) (NPPASE)].
                                                                                                                                                                                                                                                                                                             SSEDESKWVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              e/alkaline
the mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Goding J.W molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Primary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    88:5192-5196(1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTION, AND SEQUENCE FROM N.A.
MEDLINE=91271356; PubMed=1647027;
Rebbe N.F., Tong B.D., Finley E.M., Hickman S.;
"Identification of nucleotide pyrophosphatase/a phosphodiesterase I activity associated with th differentiation antigen PC-1.";
Proc. Natl. Acad. Sci. U.S.A. 88:5192-5196(1991)
                                                  PNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLOSDF
                                                                                                                                                                                                                                                                                                                                                                                                         Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G.A.,
PC-1:
                                                                                                                                                                                                                                                                                                                                                                                                        871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PC-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 169-185 FROM N.A.
MEDLINE=86094275; PubMed=3001713;
van Driel I.R., Wilks A.F., Pietersz
"Murine plasma cell membrane antigen and analysis of expression.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-87165906; PubMed=3104326; van Driel I.R., Goding J.W.; "Plasma cell membrane glycoprotein from cDNA clones.";
                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        clones.";
Them. 262:4882-4887(1987)
                                                                           PNNGTHGSLNHLLKNPVYTPKHPKEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence.";
munol. 134:443-448(1985)
                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Immunol.
                         RKYCG-
                                                                                                                                                                                                                                                                                                                                                                                                        PC1_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Biol.
                                                                                                                                                                                                                                                           803
                                                                                                                                                                                                                                                                                                               860
515
                         475
                                                  575
                                                                           531
                                                                                                     629
                                                                                                                                                                                                                                   669
                                                                                                                                                                                                                                                                                     759
                                                                                                                                                                                                                                                                                                                                                                                          PC1_MOUSE
                                                                                                                                                        684
                                                                                                                                                                                 641
                                                                                                                                                                                                           744
                                                                                                                                58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     [3]
                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                            G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <del>Q</del>
                                                                                                                                                                                 a
a
                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                     ದ್ದ
                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                        d
                          d
                                                                                                     Q
                                                                                                                              g
                                                                                                                                                        δ
                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                            δ
                                                    δ
```

Tue

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                              a
                                                                                                                              В
                                                                                                                                                              Q
                                                                                                                                                                                            d
                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ᄗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SN
GN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                  collaboration collaboration the EMBL outstation sere no restrictions on its sits content is the Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                               日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROTEIN)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             399
                                            3'-HYDROXY-TERMINAT
                               N-GLYCOSYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Signal-anchor; Hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SCKGRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -VIKALQKVDRLVGMLMDGLKDLG
                                                                                               MONONUCLEOTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RKVAPKRRQERPVAPPKKRRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ...) (POTENTIAL).
..) (POTENTIAL).
. CRC64;
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             871;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ).
MEMBRANE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Duplication; Signal-anchor;
BLOCKED.
CYTOPLASMIC (POTENTIAL).
SIGNAL-ANCHOR (TYPE-II MEME
EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VPFEERILAVLEWLQLPSHERPHFYTLYLEEPDSSGHSHGPVSSE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -LINKED (GLCNAC. -RINKED (GLCNAC. -RINKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37.8%; Score 1899.5; DB 1.1arity 41.0%; Pred. No. 1.7e-129; Conservative 155; Mismatches 262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOMATOMEDIN-B LIKE. SOMATOMEDIN-B LIKE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FDATFHLRGREKFNHRWWGGOPLWITATKOGVKAGTFFW-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-LINKED
                                                                                                                                                                                                                                                                                                                                        ; ALT_INIT.
                                                                                                                                                                                                                                                                                                                                                                         InterPro; Pdnpl.
InterPro; IPR001212; -.
InterPro; IPR001212; -.
Pfam; PF01663; Phosphodiest; 1.
Pfam; PF01033; Somatomedin_B; 2.
PRINTS; PR00022; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDIN_B; Glycoprotein; Transmembrane; Duplimomalin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87
                                                                                                                                                                                                                                                                                                                                       EMBL; J02700; AAA39893.1
EMBL; M12552; AAA39892.1
PIR; A27410; A27410.
MGD; MGI:97370; Pdnp1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 Similarity
365; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25
46
52
127
127
233
425
533
871
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
            Proc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             α
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17
           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
```

```
760
                     419
                                                                                                                                                                                                                             746
                                                                                                                                                                                                                                                 700
                                                                                                                                                                                                                                                                        806
457
                                                                                                                                                                                                                                                                                                                    863
                                                                                                                                                                                                                                                                                                                                          819
--DP
                                                                                     -IKD
                                                                                                                                                                                                                                                                       FLRNDQFSR--DDFSNCMYQDLRIPLSPVHKCSYYKSNSKLSYGFLTPPRLNRVSNHIYS
                                                                                                                                                                                                                                                                                                                     Q---YVEGSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSSFILPHRPDNEESCNSSED
                                                                                                                                                                                                                                                                                                                                 KAIIANLTCKKPDQHFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARKPLDVYKKP
                                                      GTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIM----YLQSDFDLGCTCDDKVEPKNKLDE
                                                                                                                                                                               GRPAVLYRTRY-DILYHTDFESGYSEIFLMLLWTSYT
                                                                                                                                                                                                                             VSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKY
LRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSKFSNNAKY
                                                                                                                                                                                                                                                                                                                                                                 914
                                                                                                                                                - EGFLSQCPIKSTSNDLGCTCDPWIVP
                                                                                                                                                                                                                                                                                                                                                                             ESKWVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESE
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Z
                                                                                                                                                                                                                                                                                                                                                                                                                                               743
                                                                                                                                                |:|||||||||||||| : |:|| :|| GSHGSLNHLLKKPIYNPSHPKE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                 LNKRLHTKGSTEERHLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                YCR6_YEAST
P25353;
                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 3
YCR6_YEAST
400
                                                                                                                                                                                                                                                                                                                                                                                       820
                      360
                                                                 420
                                                                                                                                                                                                                                                   643
                                                                                                                                                                                                                                                                                                                                           761
                                            458
                                                                                       518
                                                                                                             478
                                                                                                                                   578
                                                                                                                                                          534
                                                                                                                                                                                634
                                                                                                                                                                                                      585
                                                                                                                                                                                                                             688
                                                                                                                                                                                                                                                                                               701
                                                                                                                                                                                                                                                                                                                                                                 864
                                                                                                                                                                                                                                                                          747
                                                                                                                                                                                                                                                                                                                     807
```

```
seven open reading
                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                          Saccharomycetes
                                                                                                                                                                                                                                                                                                                                      PGK1
                                                                 REGION
                                                                                                                                                                                                                                                                                                                             Hilger F
between
                                                                                                                                                                                                                                                databases
                                                              INTERGENIC
                                                                                                    Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Sacc
Saccharomycetales; Saccharomycetaceae; Saccharomyces
                                                                                                                                                                                                                                                                                                                        G., Dumont J.,
.9 kb fragment
e presence of s
                                                                                                                                                                                  Pohl F., Richterich P., Wurst H.;
Submitted (MAR-1992) to the EMBL/GenBank/DDBJ
[2]
SEQUENCE OF 244-742 Trans
01-MAY-1992 (Rel. 22, Created)
01-MAY-1992 (Rel. 22, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
HYPOTHETICAL 84.9 KDA PROTEIN IN PMP1-FEN2 IN
                                                                                                                                                                                                                                                                                                                                           7.9
the
                                                                                                                                                                                                                                                                SEQUENCE OF 244-743 FROM N.A.
MEDLINE=92245758; PubMed=1574926;
Bolle P.-A., Gilliquet V., Berben G
"The complete sequence of K3B, a 7.5
CRY1 on chromosome III, reveals the frames.";
                                                                                                                                                                                                                                                                                                                             Ü
                                                                                                                                                                                                                                                                                                                                                                                     frames.";
Yeast 8:205-213(1992).
-1- SIMILARITY: TO YEAST YEL016C
                                                                                                                                                                   NCBI_TaxID=4932;
```

```
l Similarity
116; Conser
                                                                                                                                                                                                                                                                                                                                                                           VDSYGHSFG-
                                                                                                                                                                                                                                                                                                                    -SW
                                                                                                                                                                                                   Query Match
Best Local S
Matches 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           528
                                                                                                                                                                                                                                                                                                                                                                                                                                                     326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               436
                                                                                                                                                                                                                                                                                                                                     196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         382
                                                                                                                                                                                                                                         167
                                                                                                                                                                                                                                                           79
                                                                                                                                                                                                                                                                              222
                                                                                                                                                                                                                                                                                                 139
                                                                                                                                                                                                                                                                                                                                                         311
                                                                                                                                                                                                                                                                                                                                                                           256
                                                                                                                                                                                                                                                                                                                                                                                              371
                                                                                                                                                                                                                                                                                                                                                                                                                 266
                                                                                                                                                                                                                                                                                                                                                                                                                                  425
                                                                                                                                                                                                                                                                                                                    277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
PPD1_B(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AC A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               업
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                          18
                                                                                                                                                                                                                                                                                                                                                                                              26
                                                                                                                                                                                                                                                                                                                                                                                                                 570
                                                                                                                                                                                                                                                                                                                                                                                                                                   585
                                                                                                                                                                                                                                                                                                                                      459
                                                                                                                                                                                                                                                                                                                                                         466
                                                                                                                                                                                                                                                                                                                    418
                                                                                                                                                                                                                                                                                                                                                                           511
                                                                                                                                                                                                     284
                                                                                                                                                                                                                        294
                                                                                                                                                                                                                                         344
                                                                                                                                                                                                                                                            353
                                                                                                                                                                                                                                                                              377
                                                                                                                                                                                                                                                                                                 S
                                                                                                                                             Θ
                                                                                                                                                                                  0
                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              `Σ
                                                                                                                                                                                  -GVK
                                                                                                                                                                                                                                                                                                                                                         -NE
                                                                                                                                                                                                                                                                                                                                                                                                                          -THSPYMRPVYPTKTFPNLYTLA
                                                                                                                                                                                                                                         AATHMWPGSDVNYTKYKTEEKLQPEHKKPIARERTPFYFDEFNAKEPLSQKLSKIIEYVD
                                                                                                                                                       VYHNLKTSIDEDKYTVYVNGNFPKEWNFNDGKNHHMASIWIVPEPGYAVMKKEQLKKVAK
                                                                                                                                                                                                                                                                                                                                                                                                                 -DVYKKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLG
                                                                                                                                                                                                    TGQYPIHHGIVSNVFWDPDLNEEFH - - - PGVLDPRIWNNNDTEPIWQTVQSAFDGDIPFK
                                                                                                                                                                                                                                                                                                  PPKKRRRKIHRMDHYAAETRODKMTNPLREIDKIVGQLMDGLKQLKLRRCVNVIFVGDHG
                                                                                                                                                                                                                                                                                                                   --EDFTETLGEVDTFLKQLVESLQERNLTSFTNLVIVSDHG
                                                                                                                                                                                                                                                                                                                                       -RTEFLSNYLINVDDITLVPGTLGRIRSKFSNNAKYDPKA
                                                                                                                                                                                                                        SVVIPHERRILTILRWLT
                                                                                                                                                                                                                                                            LPD-HERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRQERPVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Saccharomycetes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-S288C / AB972;
STRAIN-S288C / AB972;
Dietrich F.S., Mulligan J.T., Hennessey K.M., Allen E., Araujo Aviles E., Berno A., Brennan T., Carpenter J., Chen E., Cherry Aviles E., Buncan M., Guzman E., Hartzell G., Hunicke-Smith S., Chung E., Duncan A., Komp C., Lashkari D., Lew H., Lin D., Hyman R., Kayser A., Komp C., Lashkari D., Lew H., Coefner P., Oh
                                                                                                                         146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REGION
                                                                                                                                                                                                                                                                                                                                                         -AYLEGPMMAISLKDSGNI-
                                                                                                                                                                                                                                                                                                                                                                            IIANLTCKKPDQHFKPYLKQHLPKRLHY - - ANNRRIEDIHLLVERRWHVARKPL -
                                                                                                                                                                                 TGLYPESHGIVGNSMYDPVFDATFHLRGREKFNHRWWGG----QPLWITATKQ-
                                                                                                         4
                                                                                                                         Indels
                                                                                                       ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                     616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        620
                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31, Created)
31, Last sequence update)
36, Last annotation update)
KDA PROTEIN IN PMP2-VAC8 INTERGENIC
                                                                           CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HYPOTHETICAL 57.4 KDA PROTEIN IN PMP2-VAC8 INTERGENICYELO16C.
Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetales; Saccharomycetales; Saccharomyces NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 :: |||
-IEDDFD
                                                                                                                                                                                                                                                                                                                                                                                                                                                       LKPAPNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLQSDFD
                                                                                                      Score 410; DB 1;
Pred. No. 5.4e-22;
; Mismatches 178;
                                                                 POTENTIAL.
2385E9F4BA948B0D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                      STINERPQLIGYVPNVDAFGHKHG--YPSESEY-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       493
                                                                                                                                             PPLIIFSVDGFRASYM-KKGSKVMPNIEKLRSCG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Transmembrane
                                                                                                                                                                                                                                                                                                                                                         MSDIVVPSNVIIWEDLLDEKLRKDYVSH-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT
                                                                                                                         16;
                                                                           84915 MW;
                                     Pro; IPR002591; -.
PF01663; Phosphodiest
netical protein; Trans
MEM 114 135
                                                                                                       ch 8.2%;
1 Similarity 24.0%;
126; Conservative
  Ϊ:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
s19437; S19437.
S27380; S27380.
S0000621; YCR026C.
                                                                                                                                                                                                                                                                                                                    ---XX-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Rel. (Rel. (Rel. (Rel. 57.4 I
                                                                           743 AA;
                                                                                                                                                                                                                                                                                                                                       MEDVTCD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YEB6_YEAST
P39997;
01-FEB-1995
01-FEB-1995
15-JUL-1998
                                                        Hypothetical
TRANSMEM
                                                                                                                                                                                                                        AGTFFW-
                                      InterPro;
Pfam; PF01
                                                                                                        ery Match
                                                                            SEQUENCE
                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EAST
 EMBL;
PIR; S
PIR; SGD;
                                                                                                                 Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                       571
                                                                                                                                             164
                                                                                                                                                                168
                                                                                                                                                                                                    228
                                                                                                                                                                                                                                          285
                                                                                                                                                                                                                                                                               345
                                                                                                                                                                                                                                                                                                                    378
                                                                                                                                                                                                                                                                                                                                      414
                                                                                                                                                                                                                                                                                                                                                         419
                                                                                                                                                                                                                                                                                                                                                                            460
                                                                                                                                                                                                                                                                                                                                                                                              467
                                                                                                                                                                                                                                                                                                                                                                                                                 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        586
                                                                                                                                                                                  219
                                                                                                                                                                                                                                                             295
                                                                                                                                                                                                                                                                                                 354
                                                                                                                                                                                                                                                                                                                                                                                                                                    527
                                                                                                                                                                                                                        271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESUI
YEB6_
                                                                                                        Ori
Be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DR SO
                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       П
                                                                                                                                                                d
                                                                                                                                                                                                     Dp
                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                             δ
                                                                                                                                                                                   Q
                                                                                                                                                                                                                        δŽ
                                                                                                                                                                                                                                                                                                   δŽ
                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                             δ
```

```
collaboration
                                                                                                                                            t is in no way and for commercial
                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce, or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         435
                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         --THSPYMRPVYPTKTFPNLYTLATGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YLKQHLP---KRLHYANNR----RIEDIHLLVERRWHVARKPLDVYKKPSGKCFFQGDH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PGSEVVYEDHGDVPRERMPFYFGKFNQWEKLQDKLAQIFRYIDMPQLKDRPELVISYIPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -ITATKQG-VKAGTFFW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YPIEHGIVSNIFWDNFTSSEFR---PNNLDARIWSNTADPIWQLLQTESQGEYKVATHMW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -RILTILRWLTLPD-HERPSVYAFYSEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PDFSGHKYGPFGPEESSYGSPFTPAKŔPKRKVAPKRRQERPVAPPKKRRKIHRMDHYAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DLRDKRLQKLIGEVDGFFLDLIEGLQKRNLLKISNVMIVSDHGMSNVNANDGEHVVVWER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -HFKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VFPADAMSAFISHLYN - - - - EGPMMWVCLKNPRDKOWICDLIEAQLEKAYGDEISRKFHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -IMGTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -NUCLEOTIDE
>
 Smith
                                                                                                                                                                                                                                                                                                                                                                                                                  127
                                                                                                                                                                                                                                                                                                                                                                                493;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ETRODKMTNPLREIDKIVGOLMDGLKOLKLRRCVNVIFVGDHGMEDVTCDRTEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SNYLTNVDDITLVPGTLGRIRSKFSNNAKYDPKAIIANLTCKKPDQ-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -PIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             570
                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
 Petel F.X., Roberts D., Sehl P., Schramm S., Shogren T. Taylor P., Wei Y., Yelton M., Botstein D., Davis R.W.; Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases -: SIMILARITY: TO YEAST YCR26C.
                                                                                                                                                                                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -LIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ·17;
153;
                                                                                                                                                                                                                                                                                                                                                                              Score 335.5; DB 1;
Pred. No. 7.6e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YPESHGIVGNSMYDPVFDATFHLRGREKFNHRWWG--GQPLW-
                                                                                                                                                                                                                                                                                                                          10E67A05C6DEDF09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GFD-NKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCD-
                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                      IIFSVDGFRASYM-KKGSKVMPNIEKLRSCG--
                                                                                                                                                                                                                               InterPro; IPR002591; -. Pfam; PF01663; Phosphodiest; I-Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                    71;
                                                                                                                                                                                                                                                                                           Н
                                                                                                                                                                                                                                                                                                                            57354 MW;
                                                                                                                                                                                                                                                                                                                                                                               6.7%;
ilarity 24.8%;
Conservative 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -IPHER--
```

21;

.rsp

69

831

483

60

ns

```
ö
                                                                                                          '-NUCLEOTIDES
3-'HYDROXY-TERMINATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN=2935-106;
MEDLINE=88233924; PubMed=2836792;
Vincent R.D., Hofmann T.J., Zassenhaus H.P.;
Vincent R.D., Hofmann T.J., the gene encoding the mitochondrial "Sequence and expression of NUC1, the gene encoding the mitochondrial nuclease in Saccharomyces cerevisiae.";
nuclease in Saccharomyces cerevisiae.";
                                                                                                                                                                                                                                                                                               231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              chromosome (SPP91),
e gene ACO1
                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                        9
                                                        intestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of yeast viruslike particles by strains deficient in nuclease.";
                                                                                                                                                                                       INTERMEDIATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              left
                                                                                                                                                                                                                                                                                                            |||||| |:: | ::||| ||::|| || |:|| DGFRAEYLQTWSTLVPNINKLKTCGVHSQYLRPAYPTKTFPNHYTIVTGLYPESHGIIDN
                                                                                                                                                                                                                                                                                               DGFRASYMKKGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGN
                                                                      active
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Saccharomycetes;
                                                                                                                                                                                                                                                                    ò.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Purnelle B., Coster F., Goffeau A.;
"The sequence of a 36 kb segment on the left arm of yeast c X identifies 24 open reading frames including NUC1, PRP21 (CDC6, CRY2, the gene for S24, a homologue to the aconitase and two homologues to chromosome III genes.";
Yeast 10:1235-1249(1994).
                                                                                                                                                                                                                                           61;
                                                        bovine
of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        kb DNA fragment located near
X.";
                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                            Length
                                                                                                                                                                                       FORMS A PHOSPHOTHREONINE 580C8B4807A61C84 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                 01-AUG-1988 (Rel. 08, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
MITOCHONDRIAL NUCLEASE (EC 3.1.30.-).
NUC1 OR YJL208C OR J0310 OR HRE329.
Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Sacchina; Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                          , Butler L.G.;
site peptide of
lidentification
                                                                                                                                                                                                                                                          1;
                                                                                                          S
                                                                                                         LY REMOVES 5
TERMINI OF
                                                                                                                                                                                                                                          Score 238; DB 1;
Pred. No. 5.4e-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dion C.,
                                         Butler
                                                                                                                                                                                                                                                                    Mismatches
SEQUENCE.
TISSUE=Intestine;
MEDLINE=85234541; PubMed=2989287;
Culp J.S., Blytt H.J., Hermodson M., Butl "Amino acid sequence of the active site p 5'-nucleotide phosphodiesterase and ident site residue as threonine.";
J. Biol. Chem. 260:8320-8324(1985).
-!- CATALYTIC ACTIVITY: HYDROLYTICALLY RE SUCCESSIVELY FROM THE 3-'HYDROXY TERM OLIGO-NUCLEOTIDES.
PIR; A25274; A25274.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .-A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 204-329 FROM N.A.
MEDLINE=90014786; PubMed=2552292;
Liu Y., Dieckmann C.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=95274326; PubMed=7754713;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    =7725802;
Bolle P.
                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       telomere of yeast chromosome
Yeast 10:1657-1662(1994).
                                                                                                                                                                          1
39
6999 MW;
                                                                                                                                                                                                                                          4.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
STRAIN=S288C;
MEDLINE=95242842; PubMed=77
Vandenbol M., Durand P., Bo
                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence analysis of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Liu Y., Dieckmann (
"Overproduction of
                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                      AA;
                                                                                                                                                                          .
39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mitochondrial
                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ξ.
                                                                                                                                                                                                                                                                                                                                                                                                                01-AUG-1988
01-AUG-1988
15-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                       NUC1_YEAST
P08466;
                                                                                                                                                                                                                                                                   40;
                                                                                                                                                            Hydrolase.
NON_TER
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hilger F
                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                               T 6
                                                                                                                                                                                                                                                                                             172
                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                      Best
                                                                                                                                                                                                                                                                                                                                                               SULT
  d
                                                                                                                                                                                                                                                                                                                                                                                                                            E E
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
```

```
commercial
                                                                                                 collaboration
                                                                                                                                            removed. Usage by and for commercial ent (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                 16
                                                                                                            outstation
                                                                                                                      restrictions on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          798
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                      in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MCDLLGLKPAPNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLQSDFDLGCTCDDK
                                                            ENDONUCLEASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -LSSSPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LEHITPESLAARNADRKNSFFKEDEVIPEKFRGKLRDYFR-SGYDRGHQAPAADAKFSQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -DNKFRVNYEVIGNPPSIAVPTHFFKLIVAEAPTANPARE---DIAVAAFVLPNEPISNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VEPKNKLDELNKRLHTKGSTEERHLLYGRPAVLYRTRYDILYHTDFESGYSEIFLMLLWT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  - HDLQNREEFISCYNRQTQNPYWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AKYDAFLVTNMVPMY-PAFKR-VW---NYFQRVLVKKYASERNGVNVISGPIFDYDYDGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---VRIVTGPLYLPKKDPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -SIPVPTHYYSIITSCLDFTQPADKCDGPLSVSSFILPHRP-DNE
                                                                                                 hac
EMBL
                                                                                                                                      is
                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                         329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRECURSOR
                                                                                                                                                                                                                                                                                                                                                 Mitochondrion
            ACTIVITY
                                                                                                through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SYTVSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPY
                                                                                                                     There are no rest
of as its content
                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           902
                                                                                                           and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29
                                              SIMILARITY: BELONGS TO THE DNA/RNA NON-SPECIFIC ENFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                      CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -VPIDALERSTGLELLQKVPPSKKKAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ESCNSSEDESKWVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEIL
                                                                                             This SWISS-PROT entry is copyright. It is produced between the Swiss Institute of Bioinformatics and the European Bioinformatics Institute. There are n use by non-profit institutions as long as its c modified and this statement is not removed. Usage entities requires a license agreement (See http://wor send an email to license@isb-sib.ch).
             DNASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LRP2_HUMAN STANDARD; PRT; 4655 AA.
P98164; O00711; Q16215;
01-OCT-1996 (Rel. 34, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
LOW-DENSITY LIPOPROTEIN RECEPTOR-RELATED PROTEIN
(GLYCOPROTEIN 330).
                                                                                                                                                                                                                                                                                                                                                                                                                                                159;
                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
                                                                                                                                                                                                                                                                                                                                                                                     CAEC9678CB00943C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --OILETPYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AMDDTFYLSNMCPQVGEGFNRDYWAHLEYFCRGLTKKYKS-
                                                                                                                                                                                                                                                                                                                                  ; NUCLEASE_NON_SPEC; 1.
ase; Endonuclease; Magnesium;
                                                                                                                                                                                                                                                                                                                                                                                                              Score 146.5; DB
             AND
                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 0.0 ; Mismatches
                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY
             RNASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -PTOKPNS-NIQSHSFNVDPSGFFKYGFPGPI--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OR
Cell. Biol. 9:3323-3331(1989). FUNCTION: THIS ENZYME HAS BOTH COFACTOR: REQUIRES MANGANESE OR SUBUNIT: HOMODIMER.
                                                                                                                                                                                                                                                                                                                                                                           ΒY
                                                                                                                                                                                                                                                                                                                                                                                                                                                48;
                                                                                                                                                                                                                                                                                                                                                                                    MW;
                                                                                                                                                                                                                                                                                                           ro; IPR001604; -. PF01223; Endonuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                        th 2.9%;
Similarity 22.8%;
79; Conservative
                                                                                                                                                                                            L; X06670; CAA29870.1; -
L; X77688; CAA84748.1; -
L; Z34098; CAA84003.1; -
L; Z49483; CAA89505.1; -
L; M28067; AAA34457.1; -
S05888; NCBYN1.
; S05888; NCBYN1.
; S46621; S46621.
; S0003744; NUC1.
                                                                                                                                                                                                                                                                                                                                                                          138
37209
                                                                                                                                                                                                                                                                                                                                                   Nuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HDTEDKIKQYVEGS-
                                                                                                                                                                                                                                                                                                                                                                                    329 AA;
                                                                                                                                                                                                                                                                                                                                     PROSITE; PS01070
                                                                                                                                                                                                                                                                                                                                                                          38
                                                                                                                                                                                                                                                                                                                                                               membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TKLTDFE
                                                                                                                                                                                                                                                                                                                                                  Hydrolase;
                                                                                                                                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                         ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                EMBL;
EMBL;
                                                                                                                                                                                                                                                                                   HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 7
LRP2_HUMAN
                                                                                                                                                                                                                                                EMBL;
PIR;
                                                                                                                                                                                                                                                                                                                                                               Inner
                                                                                                                                                                                                                        EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                          Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Best_Loc
Matches
                                                                                                                                                                                                                                                                                                SGD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \leftarrow
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68
                                                            -
 G E E E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       話話
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <del>Q</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ő
```

rsp

69

 $\vdash$  $\mathbf{c}$ Ø

 $\sim$ œ 4

9

0

us

Tue

```
on
ts
ay
al
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A REDLINE 2010 10 FULL STEED 1 STEED 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on is use by non-profit institutions as long as its content is in no wimodified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce or send an email to license@isb-sib.ch).
                                                                                                                                    Onyango I.
troem G.,
                                                                                                                                                                                                                                                                                                                                                                                                                         family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to the LDL-receptor protein
                                                                                                                                                                                  "Cloning and sequencing of human gp330, a Ca(2+)-binding receptor with potential intracellular signaling properties."; Eur. J. Biochem. 239:132-137(1996).
                   Euteleostomi;
                                                                                                                                  G., Harazim W., Lundgren S., Onyan
Hellman P., Davis H., Aekerstroem
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the human parathyroid
                                                                                                                                                                                                                                                                                                                                                                                                                     genes for the LDL receptor
its associated protein RAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROTEIN.
IA, INCLUDING RENAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ek B., Juhlin C., Rastad
                 Craniata; Vertebrata; Eutele Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAINS.
DOMAINS.
                                                                                                                                                                                                                                                                                        W.S.;
) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                          Tran H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S 36 LDL-RECEPTOR CLASS A S 37 LDL-RECEPTOR CLASS B S 17 EGF-LIKE DOMAINS.
S 4 SH3-BINDING DOMAINS.
S 1 SH2-BINDING DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ASSOCIATED PROTEIN (RAP).
SUBCELLULAR LOCATION: TYPE I MEMBRANE PROT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 4139-4406 FROM N.A.
MEDLINE=94244704; PubMed=8187828;
Lundgren S., Hjaelm G., Hellman P., Ek B., J
Klareskog L., Aakerstrom G., Rask L.;
"A protein involved in calcium sensing of th
placental cytotrophoblast cells belongs to t
superfamily.";
Exp. Cell Res. 212:344-350(1994).
                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=95048397; PubMed=7959795;
Korenberg J.R., Argraves K.M., Chen X.N.,
Strickland D.K., Argraves W.S.;
"Chromosomal localization of human genes f
member glycoprotein 330 (LRP2) and its ass
(LRPAP1).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=95286588; PubMed=7768901;
                                                                                                                  PubMed=8706697;
                                                                                                                                                                                                                                                                                                                                        3833-4453 FROM N.A.
                                                                                                                                                                                                                                                      OF 2705-4453 FROM N.A.
              Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                   E., Crumley, Juhlin C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROXIMAL TUBULES.
SIMILARITY: CONTAINS 3
SIMILARITY: CONTAINS 3
SIMILARITY: CONTAINS 1
SIMILARITY: CONTAINS 1
SIMILARITY: CONTAINS 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                           (LRPAP1).";
Genomics 22:88-93(1994)
                                                                                                                                                                                                                                                                                      Knaak C., Argraves W
Submitted (DEC-1993)
(Human)
                                                                                                                          Hjaelm G., Murray E. Ek B., Larsson M., .
                                                                                   FROM N.A.
                                                                                                TISSUE=Kidney;
MEDLINE=96305376;
                                Mammalia; Euther
NCBI_TaxID=9606;
                                                                                                                                                                    Rask L., Morse "Cloning and se
                                                                                                                                                                                                                                                      SEQUENCE OF 2 TISSUE=Kidney
                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 3
TISSUE=Kidney
sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FUNCTION
                                                                                   SEQUENCE
                                                                                                                                                                                                                      Eur.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4]
```

```
(POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₩
0.1.0.64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               припр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         и и и и
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          прпрп
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                m
m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTI
R CLASS P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CALCIUM-
R CLASS B
R CLASS B
R CLASS B
R CLASS B
                                                                                                                                                                                                                                                                                                                                                                                                     tosis; Coated pits;
ignal; Polymorphism.
POTENTIAL.
LOW-DENSITY LIPOPR(
PROTEIN 2.
EXTRACELLULAR (POT)
POTENTIAL.
CYTOPLASMIC (POTS)
LDL-RECEPTOR CLASS
LDL-RECEPTOR 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LASS
LASS
LASS
LASS
LASS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LASS
LASS
LASS
LASS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASS
CLASS
CLASS
CLASS
CLASS
CLASS
CLASS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASS
CLASS
CLASS
CLASS
CLASS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 လ လ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EGF-LIKE 7.
LDL-RECEPTOR
LDL-RECEPTOR
LDL-RECEPTOR
LDL-RECEPTOR
LDL-RECEPTOR
EGF-LIKE 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LDL-RECH
LDL-RECH
EGF-LIKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REC!
REC!
EMBL; U33837; AAB41649.1; -.
EMBL; U04441; AAB02882.1; -.
EMBL; S73145; AAB30825.1; -.
HSSP; P01130; 1AJJ.

MIM; 600073; -.
InterPro; IPR000033; -.
InterPro; IPR000152; -.
InterPro; IPR00152; -.
InterPro; IPR001881; -.
InterPro; IPR001881; -.
InterPro; IPR001881; -.
InterPro; IPR001881; -.
Pfam; PF00008; EGF; 13.
Pfam; PF00008; EGF; 13.
Pfam; PF00058; 1d1_recept_b; 37.
PROSITE; PS00100; ASX_HYDROXYL; 4
PROSITE; PS001186; EGF_2; 9.
PROSITE; PS01186; EGF_2; 9.
PROSITE; PS01187; EGF_CA; 3.
PROSITE; PS01209; LDLRA_1; 31.
PROSITE PS01209; LDLRA_1; 21.
PROSITE PS01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     444

444

4644

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

4645

46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSME
DOMAIN
```

ns

```
1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1826
                                                                                                                           310
                                                                                                                                                                                                                                                                                                  410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              518
151
                                          257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rhabditoidea
                                                                   ----HRROVIASDLIIRHPYALTLFEDSVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -SNYLTNVDDITLVPGTLGRIRSKFSNNAKYDPKAIIANLTCKKPDQHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WISRNL-----YSTNPRTQSIEVLTLHGDIRYRKTLIANDGTALGVGFPIGITVDPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----NSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---NLE--HLECV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -- VPDHLTSCVRPDVRVSPSFSQNCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YSLVENGSYIVAVDFDSISGRIFWSDATQGKTWSAFQNGTDRRVVFDSSIILTETIA
                                                                                                                            WITATKQG-----VKAGTFFW--SVVIPHERRILTILRWLTLPDHERPSVYAFYSEQ
                                                                                                                                                                     -DSYLDYMDF
                                                                                                                                                                                                                  ERPVA
                                                                                                                                                                                                                                                                                                                                             RATRYMRANKWHGGNOSVVMY NIQWPLGIVAVHPSKQPNSVNPCAFSRCSHLCLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                 PHFYSCVCPSGWSLSPDLLNCLRDDQPFLITVRQHIIFGISLNPEVKSNDAMVPIAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -QKLYWAVTGRGV----IERGNVDGTDRMILVHQLSHPWGIAVHD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NDKQMSYGF-LFPPYLSSSPEAKYDAFLVTNMVPMYPAFKRVWNYFQRVLVKKYASE
                                                                                                                                                                                                                                                                                                    KRRRKIHRMDHYAAETRQDKMTN---PLREIDKIVGQLMDGLKQLKLRRCVNVIFVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -PLDVYKKPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LKPAPNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPG----IMYLQSDFDLGCTCDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PKNKLDELNKRLHTKGSTEERHLLYGRPAVLYRT--RYDILYHTDFESGYSEIFL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .1.112)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FROM N.A.
91080919; PubMed-1979659;
.V., Koga M., Mendel J.E., Ohshima Y., Sternberg P.W.;
.-23 gene necessary for Caenorhabditis elegans vulval
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NLRGLQVYHRRNAAESSNGCSNNMNACQQICLPVPGGLFSCA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a; Metazoa; Nematoda; Chromadorea; Rhabditida;
dae; Peloderinae; Caenorhabditis.
ID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1992 (Rel. 21, Created)
1992 (Rel. 21, Last sequence update)
1900 (Rel. 40, Last annotation update)
1200 (Rel. 40, Last sequence update)
1300 (Rel. 40, Last sequence update)
1300 (Rel. 40, Last sequence update)
1300 (Rel. 40, Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --ERRWHVARK----
                                                                                                                                                       SGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRQ-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LYWSDQGTDSGVPAKIASANMDGTSVKTLFTG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1323 AA
                                                                                                                                                                                                                                                                                                                                                                                      -DRTEFL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YLKQHLPKRLHYANNRRIEDIHLLV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                            --NHR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -MLLWTSYTVSKQAEVSS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FFQGDHGFDNKV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                          MEDVTC-
                                           -GREKF-
```

sp

Н

Q

Ó

31 8

3 Ø 4

g

0

ns

 $\infty$ 

43

```
σ
                                                                                                                                                                                                                                                                          48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         749
                                                                                                                                                                                                                                                                                                                                             88
                                                                                                                                                                                                                                                                                                                                                                              284
                                                                                                                                                                                                                                                                                                                                                                                                                 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              809
                                                                                                                                                                                                                                                                                                                                                                                                                                                  341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                d
                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <del>Q</del>
                                                                                                                                                                                                                                                                                                                                             δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>Q</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                  MEDLINE=94147981; Pubmed-8313880;
A Aroian R.V., Les G.M., Sternberg P.W.;
A Aroian R.V., Les G.M., Sternberg P.W.;
"Mutations in the Caenorhabditis elegans let-23 EGFR-like gene define
T elements important for cell-type specificity and function.";
EMBO J. 13:360-366(1994).
C.ELEGANS VULVA. POSSIBLE RECEPTOR REQUIRED FOR THE INDUCTIVE SIGNAL
C.ELEGANS VULVA. DEVELOPMENT. ACTIVATED BY LIN-3 AND ACTS BY
WAY OF LET-60 RAS. THE LIN-3/LET-23 PAIR IS A SIMPLIFIED VERSION
OF THE MAMMALIAN NEUREGULIN-ERBB NETWORK.
C.I.CATALYTIC ACTIVITY: ATP + A PROTEIN TYROSINE = ADP +
PROTEIN TYROSINE PHOSPHATE.
C.I.SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
C.I.SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                               define
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OR PROTEIN-TYROSINE KINASE (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATP-binding; Phosphorylation; Signal.
                subfamily.
                                                                                                                                    in
                                                                                                             . Koga M., Ohshima Y.;
structure and 5' regulatory regions of the let-23 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                 receptor
                                                                                                                                                                                                                                                         (MAR-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROTEIN KINASE.
ATP (BY SIMILARITY)
ATP (BY SIMILARITY)
                the EGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LET-23 RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EXTRACELLULAR POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; X57767; CAA40919.1; ALT_SEQ.
EMBL; D63426; BAA09729.1; ALT_INIT.
EMBL; Z70038; CAA93882.1; -.
PIR; S13422; S13422.
HSSP; P11362; 1FGI.
WormPep; ZK1067.1; CE03840.
InterPro; IPR000494; -.
InterPro; IPR001245; -.
InterPro; IPR002174; -.
Pfam; PF00757; Furin-like; 1.
Pfam; PF01030; Recep_L_domain; 2.
Pfam; PF01030; Recep_L_domain; 2.
Pfam; PF0109; PK0TEIN_KINASE_ATP; PROSITE; PS00109; PROTEIN_KINASE_TYR; PROSITE; PS00111; PROTEIN_KINASE_DOM; INTERPROSITE; PS500111; PROTEIN_KINASE_DOM; INTERPROSITERPROSITERPROSITERPROSITERPROSITERPROSITERPROSITERPROSITERPROSITERPROSITERPROSITERPROSITERPROSITERPROSITERPROSITERPROSITERPROSITERPROS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Receptor; POTENTIAL.
              of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-LINKED
N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tyrosine-protein kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-LINKED
Lucuction encodes a tyrosine kinase
Nature 348:693-699(1990).
[2]
                                                                                                  PubMed=8604137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BY
                                                                                                                                                      elegans.";
6:548-555(1996)
                                                                                                                                                 =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       841
1323
1152
899
919
1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1323
818
                                                                                                                                    nomic con nematode C. ele
                                                                SEQUENCE FROM N.A. STRAIN=BRISTOL N2; MEDLINE=96177760;
                                                                                                                                                                                                      SEQUENCE FROM N.A. STRAIN=BRISTOL N2; Thomas K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       819
842
885
891
919
1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91
169
255
376
561
655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Transferase;
                                                                                                                                                                                                                                                         Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BINDING
ACT_SITE
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                   "Genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                          MUTANTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHAIN
                                                                                                                  Sakai
                                                                                                                                                    the
                                                                                                                                                                           3.
                                                                                                                                                                                                                                                                            [4]
                                                                                                                                                                                                                                                                                                                                                                           KW
KW
FT
```

```
476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          364
                                                                                                                                                                                                    Ga
                                                                                                                                                                                                                                 -KSYTSCC
                                                                                                                                                                                                                                                    -LARGDCCTNYQVV
                                                                                                                                                                                                                                                                                                                                                        CKGESHW--VDD--DCEEIKAAECPAGFVRPPLIIFSVDGFRASYMKKGSKVMPNIEKLR
                                                                                                                                                                                                                                                                                                                                                                                    --NETLKNLEGCE
                                                                                                                                                                                                                                                                                                                                                                                                                     SCGTHSPYMRPVYPTKTFPNLYTLAT-GLYPESHGIVGNSMYDPVFDATFH-LRGREKFN
                                                                                                                                                                                                                                                                                                                                                                                                                                                  --LIIEHAFTYEQLKVLETVKIVSEYITIVQQNFYDLKFLKNLQIIEGRKLHN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRRKIHR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLKLRRCVNVIFVGDHGMEDVTCDRTEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -NCNKRGCWGKEPEDCLECKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GRPAVLYRTRYDILYHTDFESGYSEIFLMLL---WTSYTVSKQAEVSSVPDHLTSCVRPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -LTCKKPDQHFKPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LKQHLPKRLHYAN-NRRIEDIHLLVERRWHVARKPL--DVYKKPSGKCFFQGDHGFDNKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -LGC-TCDD----KVEPKNKLDELNKRLHTKGSTEERHLLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VCKKCHHECDQNYHCANGQSTGCQKCKNFTVFKGDIAQCVSECPKNLPFSNPANGECLDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -QPLWITATKQGVKAGTFFWSVVIPHERRILTILRWLTLPDHERPSVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --KTLYNSDFGNRMECVH----DCPVSHFPTQKNVCEKCHPTCYDNGCTGPDSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -LGLKPAPNNGTHGSLNHLLRTNT-FRPTMPEEVTRPNYPGIMYLQSDFD-
                                                                                                                                                                                                                                                                                                               KYELDGICIETCPSRKIFNHKTGRLVFNPDGRYQNGNHCVKECPPELLIENDVCVRH-
                                                                                                                                                                                                   264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -IITSKGKDNKPSLAIAENR-
                                                                                                                                                                     1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                         CRC64
                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NSMQTVFVGYG --PTFKYKTKVPPFENIELY ------NVMC --- DL --
N-LINKED (GLCNAC...)
N-LINKED (GLCNAC...)
C -> Y (IN SY10).
G -> R (IN MN216).
C -> W (IN MN23).
C -> Y (IN SY11).
T -> Y (IN SY11).
T -> Y (IN SY16).
G -> E (IN SY7).
MW; 6B0307EE53EEFA99 C
                                                                                                                                                                                                                                                                                                                                                                                      --ICTVDGHLT--
                                                                                                                                                                                                                                                                                             -HDFDELCLKTARGWECTKDRCGEV----RNEENACHCSEDC--
                                                                                                                                                                                                                                 -GRCFELQEAGPPDCRCDNLC
                                                                                                                                                                                                  290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           443 VRWALAIYQCDDLEELSLNSLKL-IKTG----AVLIMKNHRLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LSNYLTNVDDITLVPGTLGRIRSKFSNNA-KYDPKAIIAN--
                                                                                                                                                                     Score 122; DB 1;
Pred. No. 0.73;
5; Mismatches 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ASVRPNMSRICLIPSSELQTKLDKKLGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --LAYKNDKQMSYG
                                                                                                                                                                                                                                                                                                                                                                         ;, Pr
106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ---RVCDK-
                                                                                                                        150510
                                                                                                                                                                     Query Match
Best Local Similarity 18.4%
Matches 149; Conservative
  746
776
368
469
700
753
1065
                                                                                         1.
1.
AA;
                                                                                                                                                                                                                                 SDSPWTNISGSCK-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --YVSKIDWSS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VRVSPSFSQNC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -DSKLCETEQ-
  746
776
368
469
700
753
1065
1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                   QIDGH--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HRWWGG-
 CARBOHYD
CARBOHYD
VARIANT
VARIANT
VARIANT
VARIANT
```

```
o
                                                                                                                                                                                                                                                                                           ts
                                                                                                                                                                                                                                                                                                        way
ial
                                                                                                                                                                                                                                                                                                                                  è
                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on i use by non-profit institutions as long as its content is in no w modified and this statement is not removed. Usage by and for commercienties requires a license agreement (See http://www.isb-sib.ch/announc or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -KKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            --RROERPVAPPKKRRRKIHRMDHYAAETRODKMTNPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REIDKIVGQLMDGLKQLKLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SHSYKKPSDSKSVGGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LHYANNR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KLKRTHTVHDKCQKVAK - - LDHY IRDNI ELNSKEREHDCYEGTLAVPQVNTEIRKSSRKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PNNSFIKTOG-LNSILQLDIVTHPFKSVYAFSCLFNIQDDVFKTFEKLKDTFETVLENLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GIMYLOSDF-DLGCTCDDKVEPKNKLDELNKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -TVFFQSSSNPNYFTDVNPFWNIGIWSTTFNVITFRPGLSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          --FSVNSKKHSVNINAKTAANNGLSHLQNFSEELLKKRKLFSSLFSNNVSYKKSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            - PEEVTRPNYP
                                                                                                                                                                                                               Wood V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SGKCFFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLGLKPA--
                                                                                                                                                     NCBI_TaxID=4896;
[1]
SEQUENCE FROM N.A.
STRAIN=972;
Gentles S., Churcher C.M., Barrell B.G., Rajandream M.A., Wood N. Submitted (AUG-1997) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (POTENTIAL)
-!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (POTENTIAL)
-!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           268;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1888;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8AD3BBCE32397C29 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                               CHROMOSOME
                                                                           HYPOTHETICAL 217.4 KDA PROTEIN C6B12.02C IN CHROMOS SPAC6B12.02C.
Schizosaccharomyces pombe (Fission yeast).
Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes Schizosaccharomycetales; Schizosaccharomycetaes; Schizosaccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LGRIRSKFSNNAKYDPKAIIANLTCKKPDQHFKPYLKQHLPKR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                       (Rel. 36, Created)
(Rel. 36, Last sequence update)
(Rel. 36, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ed. No. 1.4 Mismatches
                1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 121;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                   EMBL; Z98531; CAB11064.1; -.
Hypothetical protein; Transmembrane.
TRÄNSMEM 697 717 POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POLY-LEU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --TNTFRPTM-
              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ĭ.
ĭ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         i; P3
101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2.4%;
ilarity 17.2%;
Conservative 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RIEDIHLLVERRWHVARKPLDVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   217432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SYGSPFTPAKRPKRKVAPK--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -IDQVLSDWYSGKHELVQQ
                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                 al protein; T 697 717 715 866 886 935 935 935 937 1033 1053 1665 1665 1888 AA; 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -THGSLNHLLR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    123; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KAQRFIRDD--FD
_SCHPO
YDT2_SCHPO
014207;
15-JUL-1998
15-JUL-1998
15-JUL-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PNNG
                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
Matches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              607
                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15;
                                                         756
                                                                                     870
969
                            845
                                                                                                                  791
                                                                                                                                               926
                                                                                                                                                                                                         986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 15-252 FROM N.A., AND SEQUENCE OF 1-49.

STRAIN=ATCC 36190;

MEDLINE=98417435; PubMed=9746353;

HO H.-C., Liu F.-C., Chung J.-G., Chen L.-Y.;

Ho H.-C., Liu F.-C., Chung J.-G., Chen L.-Y.;

"Purification, characterization and complete amino acid sequence nuclease C1 from Cunninghamella echinulata var. echinulata.";

Eur. J. Biochem. 256:112-118(1998).

-!- FUNCTION: THIS ENZYME HAS BOTH RNASE AND DNASE ACTIVITY.

-!- COFACTOR: REQUIRES MAGNESIUM OR MANGANESE FOR ACTIVITY.

-!- SUBCELLULAR LOCATION: SECRETED.

-!- SUBCELLULAR LOCATION: SECRETED.
                                                                                                                    GPIF
               -RSQLVEKIAVLFQT-FQVVFYCEFELGNQQNINKVSWLASDLISKL--LSA
                                                                                                                                                                           -LHDTEDKIKQYVEGSSIPVPTHYYSIITSCLDFTQPADKC
                                                                                                                                                                                                        QIGLNGTTHSPGNNSFWPLIIRVSESAFKMHKDGHNVKVVERYLRTVFLRIHFLISEWRW
                                                                                                                                                                                                                                                                   1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ERHLLYGRPAVLYRTRYDILYHTDFESGYSEIFLMLLWTS--YTVSKQAEVSSVP-DHLT
 LHTKGSTEERHLLYGRPAVLYRTRYDILYHTDFESGYSEIFLMLLW-TSYTVSKQAEVSS
                                                          VPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYDAFLVTNMVP
                                                                                                                                       DTTVIDTL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   49;
                                                                                                                                                                                                                                                    EDVAQILFLIFDFFSHRKFNDLSSEISEDTPTDFPDFVK-SLDRPPNL-HVTALD
                                                                                                                                                                                                                                      -- LPHRPDNEESCNSSEDESKWVEELMKMHTARVRDIEHLTSLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mucorales;
                                                                                                                    -SERNGVNVIS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Endonuclease; Magnesium.
17 BY SIMILARITY.
17498 MW; 2FA49B158AAABEC6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 119.5; D
Pred. No. 0.13;
                                                                                                                                                                                                                                                                                                                                                                                      update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Fungi; Zygomycota; Zygomycetes;
Cunninghamellaceae; Cunninghamella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d. No. 0.1.
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                 echinulata
                                                                                                                                                                                                                                                                                                                                           252
                                                                                                                                                                                                                                                                                                                                                                                      Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS01070; NUCLEASE_NON_SPEC;
                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                   --KKYA-
                                                                                                                                                                                                                                                                                                                                                                                                                                               var.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33;
                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            87 E
27498 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Endonuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AF043517; AAC78769.2;
                                                                                                                                                                                                                                                                                                                                                                       (Rel. 37, Creat
(Rel. 37, Last
(Rel. 37, Last
(EC 3.1.30.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                 echinulata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity 25.065; Conservative
                                                                                                                     MY PAFKRVWNY FORVLV --
                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                           | | | ::|: |
GQSGLLECYR-NLRIQAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pro; IPR001604;
PF01223; Endonu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _TaxID=76406;
                                                                                                                                                                                                                                        DGPLSVSSFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                Cunninghamella
                                                                                                                                                                                                                                                                                                                                          NUC1_CUNEE
P81203;
15-DEC-1998
15-DEC-1998
15-DEC-1998
                                                                                                                                                                              DYDYDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
Pfam; PF01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                    NUCLEASE
                                                                                                                                                                                                                                                                                                                             CUNEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_
 638
                                                          697
                                                                                                                                                                             792
                                                                                                                                                                                                                                      838
                                                                                                                                                                                                                                                                  987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   646
                                                                                      846
                                                                                                                  757
                                                                                                                                                                                                         927
                                                                                                                                                871
                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2005
                                                                                                                                                                                                                                                                                                                                                                                      TO
TO
                                                                                                                                                                                                                                                                                                                                                                                                                   RP
RC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RA
RT
RT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                      9
                                                                                                                                                d
                                                                                                                                                                                                         a
                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                   g
  Š
                                                           Q
                                                                                                                    ģ
                                                                                                                                                                               ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ğ
```

.rsp

σ

9-

31

**ω** ന

-48

60

us

8

43;

340

137

283

386

442

304

```
225 NDKCWGSGDNDCQRVYRSVCPKSCSQCFYSNSTSSYEC-CDSACLGGCTGHGPKNCIACS
                                                                                                                                                                                                                                                                                                                                                         -HDFDELCLKTARGWECTKDRCGEV-----RNEENACHCSEDC----LARGDCCTNYQVV
                                                                                                                                                                                                                                                                                                                                                                                                                                CKGESHW--VDD--DCEEIKAAECPAGFVRPPLIIFSVDGFRASYMKKGSKVMPNIEKLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                    SCGTHSPYMRPVYPTKTFPNLYTLAT-GLYPESHGIVGNSMYDPVFDATFH-LRGREKFN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QIDGH----LIIEHAFTYEQLKVLETVKIVSEYITIVQQNFYDLKFLKNLQIIEGRKLHN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----QPLWITATKQGVKAGTFFWSVVIPHERRILTILRWLTLPDHERPSVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AFY SEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRKIHR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MDHY AAETRODKMTNPLREIDKIVGOLMDGLKQLKLRRCVNVI FVGDHGMEDVTCDRTEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---NCNKRGCWGKEPEDCLECKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LKQHLPKRLHYAN-NRRIEDIHLLVERRWHVARKPL--DVYKKPSGKCFFQGDHGFDNKV
                                                                                                                                                                                                                                                                                   -KSYTSCC
                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                                               264;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            --IITSKGKDNKPSLAIAENR-
                                                                                                                                                                                                    Length 1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-LINKED (GLCNAC. . .) (POTE
N-LINKED (GLCNAC. . .) (POTE
C -> Y (IN SY10).
G -> R (IN MN216).
C -> W (IN MN23).
C -> Y (IN SY11).
T -> I (IN SY11).
T -> I (IN SY16).
G -> E (IN SY7).
                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VRWALAIYQCDDLEELSLNSLKL-IKTG----AVLIMKNHRLC----
                                                                                                                                                                                                                                                                                    -- GRCFELQEAGPPDCRCDNLC
                                                                                                                                                                                                       Score 122; DB 1; Pred. No. 0.73; h; Mismatches 290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LSNYLTNVDDITLVPGTLGRIRSKFSNNA-KYDPKAIIAN-
                                                                                                                                                                                                                                            106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---RVCDK-
                                                                                                                                                                                                         2.4%;
                                                                                                                                                    50510
                                                                                                                                                                                                           Query Match
Best Local Similarity 18.4
Matches 149; Conservative
 746
776
368
469
700
753
1065
                                                                                                                                                                                                                                                                                    SDSPWTNISGSCK --
                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -- YVSKIDWSS
 746
776
368
469
700
753
1065
1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -DSKLCETEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HRWWGG--
  CARBOHYD
CARBOHYD
VARIANT
VARIANT
VARIANT
VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         443
                                                                                                                                                                                                                                                                                                                                                                                                284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     477
                                                                                                                                                                                                                                                                                      48
                                                                                                                                                                                                                                                                                                                                                             88
                                                                                                                                                                                                                                                                                                                                                                                                                                     138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          509
      엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
-!- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
-!- SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                   MEDLINE=94147981; PubMed=8313880;
A Aroian R.V., Les G.M., Sternberg P.W.;
A Aroian R.V., Les G.M., Sternberg P.W.;

"Mutations in the Caenorhabditis elegans let-23 EGFR-like gene define
T elements important for cell-type specificity and function.";
EMBO J. 13:360-366(1994).

C.ELEGANS VULVA. POSSIBLE RECEPTOR FOR THE INDUCTIVE SIGNAL
REQUIRED FOR VULVAL DEVELOPMENT. ACTIVATED BY LIN-3 AND ACTS BY
WAY OF LET-60 RAS. THE LIN-3/LET-23 PAIR IS A SIMPLIFIED VERSION
C THE MAMMALIAN NEUREGULIN-ERBB NETWORK.

C-!- CATALYTIC ACTIVITY: ATP + A PROTEIN TYROSINE = ADP +
PROTEIN TYROSINE PHOSPHATE.

C-!- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
C-!- SIMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                            gene define
   induction encodes a tyrosine kinase of the EGF receptor subfamily." Nature 348:693-699(1990).
                                                                                                                 Sakai T., Koga M., Ohshima Y.; "Genomic structure and 5' regulatory regions of the let-23 gene in the nematode C. elegans."; J. Mol. Biol. 256:548-555(1996).
                                                                                                                                                                                                                                                                     (MAR-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; X57767; CAA40919.1; ALT_SEQ.

EMBL; D63426; BAA09729.1; ALT_INIT.

EMBL; Z70038; CAA93882.1; -.

PIR; S13422; S13422.

HSSP; P11362; 1FGI.

WormPep; ZK1067.1; CE03840.

InterPro; IPR000494; -.
                                                                                                  PubMed=8604137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IPR000719;
                                                         SEQUENCE FROM N.A.
STRAIN=BRISTOL N2;
MEDLINE=96177760;
                                                                                                                                                                                                                               STRAIN=BRISTOL N2;
Thomas K.;
                                                                                                                                                                                                                 SEQUENCE FROM N.A
                                                                                                                                                                                                                                                       Submitted (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                          MUTANTS
                                                                                                                                                                                  3.
                                                                                                                                                                                                                                                                                          [4]
```

DR DR

480

364

542

່ເນັ Н

σ

φ ı 31

8 m  $\infty$ マ

g 0

us

```
g
                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                         795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGION (ORF1)
                                                                                                                                                                                                                                                                                                            Endonuclease; Magnesium;
                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MTS1 gene encodes a putative
in mitochondrial protein targeting.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     etel F.X.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Aviles E., Berno
                                                                                      SIMILARITY: BELONGS TO THE DNA/RNA NON-SPECIFIC ENDONUCLEASES FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPEAKYDAFLVTNMVPMY-PAFKR-VWNYFQ---RVLVKKYASERNGVNVISGPIFDYDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -SVSSFILPHRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |:| | | | | AEKSGEPTSSPSVAAFVLPNKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----VTIMTGPLYLPKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Saccharomycetes
                                                                                                                                                                                                                                                                                                                                                                                                                             22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lew H., Lin
7-1996) to the EMBL/GenBank/DDBJ databases. THIS ENZYME HAS BOTH RNASE AND DNASE ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                  Length 335;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.

Dietrich F.S., Mulligan J., Allen E., Araujo R., Aviles E Carpenter J., Chen E., Cherry J.M., Chung E., Duncan M., Hunicke-Smith S., Hyman R., Komp C., Lashkari D., Lew H., Mosedale D., Nakahara K., Namath A., Oefner P., Oh C., Pe Roberts D., Schramm S., Schroeder M., Shogren T., Shroff Winant A., Yelton M., Botstein D., Davis R.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INTERGENIC
                                                                           MEMBRANE
                                                                                                                                                                                                                                                                                                                                                      55E59DEC3AE26F4D CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DGLHDTEDKIKQYVEGSSIPVPTHYYSIITSCLDFTQPADKCDGPL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Sacc
Saccharomycetales; Saccharomycetaceae; Saccharomyces
                                              (BY
                                                                                                                                                                                                                                                                                                                                                                                                                              42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
                                          COFACTOR: REQUIRES MANGANESE OR MAGNESIUM SUBUNIT: HOMODIMER (BY SIMILARITY).
SUBCELLULAR LOCATION: MITOCHONDRIAL INNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1993 (Rel. 27, Created)
1998 (Rel. 37, Last sequence update)
1998 (Rel. 37, Last annotation update)
TICAL 112.2 KDA PROTEIN IN TIF35-NPL3
OR D9461.18.
                                                                                                                                                                                                                                                                                                                                                                                       Score 117; DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ¥
                                                                                                                                                                                                                                                                                           PROSITE; PS01070; NUCLEASE_NON_SPEC; 1.
Hypothetical protein; Hydrolase; Nuclease;
Mitochondrion; Inner membrane.
                                                                                                                                                                                                                                                                                                                                                                                                              ed. No. 0.2 Mismatches
                                                                                                                                                                                                                                                                                                                                         SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cerevisiae MTS1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PubMed=8224861;
                                                                                                                                                                                                                                                                                                                                         ΒY
                                                                                                                                                                                                                                                                              Endonuclease; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                            23;
                                                                                                                                                                                                                                                                                                                                                       38053 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RNA-binding protein involved Gene 132:175-183(1993).
                                                                                                                                                                                                                                                                                                                                                                                              2.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N.A
                                                                                                                                                                                                                                                   99; CAA97354.1;
IPR001604; -.
                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-166 FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=94040759; PubMeEllis E.M., Reid G.A.; "The Saccharomyces cere
 (MAY-1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YD30_YEAST STAN
P32898; Q04068;
01-OCT-1993 (Rel. 2
15-DEC-1998 (Rel. 3
15-DEC-1998 (Rel. 3
                                                                                                                                                                                                                                                                                                                                                      335 AA;
                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 37; Conser
                            SIMILARITY).
                                                                                                                                                                                                                                                                                                                                      142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                              PF01223;
               FUNCTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        263
                                                                                                                                                                                                                                                    Z73099;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NO--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IADN
 Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                    InterPro
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YDR430C
                                                                                                                                                                                                                                                                                Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YD30_YEAST
                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        260
                                                                                                                                                                                                                                                                                                                                                                                                                                                         741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            853
                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                               Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                  DR
DR
DR
KW
a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OT
DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RA
RA
RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DŢ
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 390
                                                                                                                                                                                                                                                                                                                                                                                                          267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           704
                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                            -HGIVGNSMYDPVFDATFHLRGREKFNHRWWGGQPLWITATKQ
                                                                                                                                                                                                                                                                                                                                              IFSVDGFRASYMKKGSKVMPNI-EKLRSCGT----HSPYMRPVYPTKTFPNLYTLATG-
                                                                                                                                                                                                                                                                                                                                                                           VFSI-AFKTN--PPDSTGVPHILEHTTLCGSVKYPVRDPFFKML--NKSLANFMNAMTGP
                                                                                                                                                                                                                                                                                                                                                                                                                                         -LLKQEDFDQEGWRLEHKNITDPES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -LMDG-----LKQLKLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --KAGTFFWS----VVIPH-----ERRILTILRWLTLPDHERPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FKPYLKQHLPKR----LHYANNRRIEDIHLLVERRWHVARKPLDVYKKPSGKCF---FQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -CFTFSIQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --SRITDIN--GITYVRGKRLLNDIIPFELFP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YLPLFAESLTNLGTTTESFSEIEDQI-----KLHTGGISTHVEVTSDPNTTEPRLIFGFD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --ILYHTDF--ESGYSEIFLMLLWTSYTVSKQAEVSSVPDHLTSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYDAFLVTNMVPMYPAFKRV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --RLREKITALDEQDKKNIFKRGILLQEKQNEKEDLSCLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -STEERHLLYGRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -LPLVDTLKQLNE
                                                                                                                                                                                                                                                                                                                329;
                                                                                                                                                                                                                      5)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            --SSVAD-
                                                                                                                                                                                                                                                                                 989
                                                                                                                                                                                                                       REF
                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NIVFKGVVYNEMKGQISNANYYFWSKFQQSIYPSLNNSGGDPMKITDLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LLGLKPAPNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYL-
                                                                                                                                                                                                                      YAQAQAVR -> MPKHRPLA ; 6CAD2EE5A6080D9C (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GWSLNSKTDHIFEFWSKILLETDFHKNSDKLKVLIRLLASSNT-
                                                                                                                                                                                                                                                                                                                263;
                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -- IRKYIVHKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VPGTLGRI-RSKFSNNAKYDPK---AIIANLTCKKPDQH--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVM-
                                                                                                                                                                                                                                                                                 Score 116.5; I
Pred. No. 1.3;
10; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -QSDFDLGCTCDDKVEPKNKLDELNKRLHTKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HRMDHYAAETRODKMTNPL---REID-KIVGQ--
                                                                                                                                                                                                                                                                                                                                                                                                                                         DYTFFPFSTTNPQDFANLRGVYLDSTLNP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --YGDLLDFHHKNYHPSNAKTFTYGN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FESLLFEDVLQRFRGDLETKGDTLFQDL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TLQIKDIPRAGDKYSIEQ -- KNNTM --
                                                                                                                                                                                                                      18 YA
112180 MW;
                                                                                                                                                                                                                                                                                                                 110;
                                                                                                                                       EMBL; X70951; CAA50290.1; -.
EMBL; U33007; AAB64877.1; -.
PIR; S31321; S31321.
SGD; S0002838; YDR430C.
Hypothetical protein.
CONFLICT 11 18 Y
SEQUENCE 989 AA; 112180 MW;
                                                                                                                                                                                                                                                                                 2.3%;
18.5%;
                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEEFSKSLDDEEQT----
                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 159; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AVLYRTRYD---
                                                                                                                                                                                                                                                                                                                                                                                                           -LYPES-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -- A5
                                                                                                                                                                                                                                                                                                                                               168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        473
                                                                                                                                                                                                                                                                                                                                                                             64
                                                                                                                                                                                                                                                                                                                                                                                                                                          122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           705
a
                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Óζ
```

--TLNGIEQLOFINRL

--GYSAAHYRSSGAINE--

-AGHAFAR-

```
SITE
DISULFID
                                        DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
REPEAT
DOMAIN
DOMAIN
OD_RESOOMAIN
REPEAT
SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.

TISSUE=Fibroblast, and Platelet;

MEDLINE=90275601; PubMed=2350783;

Kanzaki T., Olofsson A., Moren A., Wernstedt C., Hellman U.,

Miyazono K., Claesson-Welsh L., Heldin C.-H.;

TGF-beta 1 binding protein: a component of the large latent complex of TGF-beta 1 with multiple repeat sequences.";

Cell 61:1051-1061(1990).

-1- SUBUNIT: THE LARGE LATENT COMPLEX OF TGF-BETAL FROM PLATELETS IS COMPOSED OF THE TGF-BETA1 MOLECULE NONCOVALENTLY ASSOCIATED WITH A DISULFIDE-BONDED COMPLEX OF A DIMER OF THE N-TERMINAL PROPEPTIDE OF THE TGF-BETA1-BP DOES NOT BIND DIRECTLY TO ACTIVE TGF-BETA1.

C-1- ALTERNATIVE PRODUCTS: HUMAN PLATELETS TGF-BETA1-BP IS CONSIDERABLY SMALLER THAN THE FIBROBLAST FORM (125 KDA VS. 170-190 KDA),

C-1- ALTERNATIVE PRODUCTS: AND A STERNATIVE SPLICING OF THE SAME GENE OR THAT TGF-BETA1-BP UNDERGOES CELL-SPECIFIC PROTEOLYSIS.

C-1- PTM: CONTAINS HYDROXYLATED ASPARAGINE RESIDUES.

C-1- SIMILARITY: CONTAINS 16 EGF-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Signal;
            810
                                 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BETA
                                                                                                                                                                                      1 PRECURSOR (TGF-BETA1-BP
                                --FITSDSDVQAKTVESQISKFMER
                                                                                                                                                                                                                                              Euteleostomi;
            -EDKIKQYVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hydroxylation;
                                                                                                                                                                                                                                              Craniata; Vertebrata; Eutele
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GROWTH
                                                                                                                                                    01-AUG-1991 (Rel. 19, Created)
01-AUG-1991 (Rel. 19, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
LATENT TRANSFORMING GROWTH FACTOR BETA BINDING PROTEIN
(TRANSFORMING GROWTH FACTOR BETA-1 BINDING PROTEIN 1) (
            -- KKYASERNGVNVISGPIFDYDYDGLHDT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LATENT TRANSFORMING BINDING PROTEIN 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EGF-like domain;
                                 HSLLDNEETFOREVVDKLTELQKYIVDTNNMNF--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       splicing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00683; TB; 4.
PROSITE; PS00010; ASX_HYDROXYL;
PROSITE; PS00022; EGF_1; 2.
PROSITE; PS01186; EGF_2; 11.
PROSITE; PS01187; EGF_CA; 15.
                                                                            800
                                                      826
                                                                                                                                                                                                                                  Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
NCBL_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  L; M34057; AAA61160.1; -, A35626, A35626.
P; P35555; 1EMO.; 150390; -.
erPro; IPR000152; -.
erPro; IPR00152; -.
erPro; IPR001881; -.
                                                                           780 LPHGSCLPNGPKTSDYPLIGS
                                                      --VPTHYYSIITS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alternative
                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EGF;
TB; 4
           FORVLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PF00008;
PF00683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Growth factor
Glycoprotein;
SIGNAL
                                                      SIP
                                                                                                                                  HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro;
            WNY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HSSb;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
                                                                                                                       TGFB_HUMAN
                                                                                                                                                                                                                        LTBP1
                                 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR;
            765
                                                      811
                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                    댗
                                                                                                                                                                            DE
DE
DE
                                                                                                                                                                                                                        GN
OC
OC
OC
NX
OC
NX
OC
                                                                                                                                                                                                                                                                                         RP
RX
RA
RA
RA
RT
                                 d
                                                                            d
            δ
                                                        δ
```

```
| Fig. 1900_RES | 2.01 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
```

ns

```
5
                                                                                                                                                                                         108
                                                                                                                                                                                                                797
                                                                                                                                                                  737
                                                                                                                                                                                                                                                            857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gerschenson M., Houmiel K.L., Low R.L.;
"Endonuclease G from mammalian nuclei is identical to the major endonuclease of mitochondria.";
Nucleic Acids Res. 23:88-97(1995).

-!- FUNCTION: CLEAVES DNA AT DOUBLE-STRANDED (DG)N.(DC)N AND AT SINGLE-STRANDED (DC)N TRACTS. IN ADDITION TO DEOXYRIBONUCLEASE ACTIVITIES, ALSO HAS RIBONUCLEASE (RNASE) AND RNASE H ACTIVITIES CAPABLE OF GENERATING THE RNA PRIMERS REQUIRED BY DNA POLYMERASE GAMMA TO INITIATE REPLICATION OF MITOCHONDRIAL DNA.
                                                                                                                                           87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA replication generated by endonuclease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              electrophoretically
                                                                                                                                                                 PSTCPDEQCVNSPGSYQCVPCTEGFRGWNGQCLDVDECLEPNVCANGDCSNLEGSYMCSC
                                                                                                                                                                                                                                       - - NY
                                                                                                                                            --CDNLCKSYTSCC
                                                                                                                                                                                                               HKGYTRTPDHKHCRDIDECOOGNLCVNGQCKNTEGSFRCTCGQGYQLSAAKDQCEDIDEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Euteleostomi;
cora; Bovoidea
                                                                                                                                                                                                                                                            OHRHLCAHGOCRNTEGSFQCVCDQGYRASGLGDHCEDINECLEDKSVCQRGDCINTAGSY
   (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                    92;
                                                                                                                                                                                                                                       --ARGDCCT-
                                                                                               1394;
                                                                                                                                                                                          -KDRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                taurus (Bovine).
1ryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
1alia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                            CRC64;
                                                                                                                      Indels
                                                                                               Length
                                                                                                                                          -KGRCFELQEAGPPD-CR-
                                                           DFFCA81A40B2C7D1
                                                                                                                                                                                                                                    -HCSE--DCL--
                                                                                                                    48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            f proteins 
support.";
                                                                                                                                                                                                                                                                                                                                                                                                                          3
  (GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                      (Rel. 30, Created)
(Rel. 30, Last sequence update)
(Rel. 38, Last annotation update)
G PRECURSOR (EC 3.1.30.-) (ENDO
                                                                                                                                                                                          -CLKTARGWECT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OR MAGNESIUM
                                                                                             Score 112; DB : Pred. No. 4.1; 7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                  299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 49-75.
TISSUE=Liver, and Thymus;
MEDLINE=88198128; PubMed=3360771;
Moos M. Jr., Nguyen N.Y., Liu T.-Y.;
"Reproducible high yield sequencing of separated and transferred to an inert subject of them. 263:6005-6009(1988).
  N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE, AND CHARACTERIZATION
                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
TISSUE-Liver;
MEDLINE-93342514; PubMed-7688144;
Cote J., Ruiz-Carrillo A.;
"Primers for mitochondrial DNA re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE=Heart;
MEDLINE=95175374; PubMed=7870594;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COFACTOR: REQUIRES MANGANESE
                                                                                                                                                                                                                                                                                   -CEEIKAAECP
                                                                                                                                                                                                                                                                                                         DCTCP-DGFQLDDNKTCQDINECEHP
                                                                                                                    17
                                                                                            2.2%;
ilarity 23.8%;
Conservative 1
                                                            91
                                                                                                                                                                                         -DFDEL--
                                                            527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Science 261:765-765(1993)
                                                                                                                                                                                                                                      -GEVRNEENA --
                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
98
294
870
923
1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bos
                                                                                                                                           PTVLSDSPWTNISGS-
                                                                                                                                                                                                                                                                                   QVVCKGESHWVDDD-
                                                            AA;
                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bovinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=9913;
 98
294
870
923
1039
1394
                                                                                                                                                                                                                                                                                                                                                                              U1-OCT-1994 (
01-OCT-1994 (
15-JUL-1999 (
ENDONUCLEASE (
ENDOG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota;
Mammalia; E
                                                                                                                   49;
                                                                                                                                                                                                                                                                                                                                                                  BOVIN
 CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cote J.,
"Primers
                                                                                              Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bovidae;
                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PARTIAL
                                                                                                                                                                                         Ή
                                                                                                                                                                                                                                                                                                                                                                  NUCG_B(P38447
                                                                                                                                                                                                                                                                                                                                           RESULT 15
NUCG_BOVIN
                                                                                            Query Ma
Best Loc
Matches
                                                                                                                                                               678
                                                                                                                                                                                                                                                                                                         828
                                                                                                                                           44
                                                                                                                                                                                        88
                                                                                                                                                                                                               738
                                                                                                                                                                                                                                                            798
                                                                                                                                                                                                                                                                                  135
                                                                                                                                                                                                                                      109
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>`</u> [
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <del>-</del>-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ö
                                                                                                                                                                                                                                                                                                                                                                           FT
FT
FT
SO
                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                  ΠD
                                                                                                                                                                                        Qγ
                                                                                                                                           ð
                                                                                                                                                                                                                                      φ
                                                                                                                                                                                                                                                                                   δ
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                            SPEAKYDAFLVTNMVPMYPAF-KRVWN---YFQRVLVKKYASERNGVNVISGPIFDYDYD 796
                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                           peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -LEAAGGQIELRSYVMPNA
            MITOCHONDRIAL.
THE DNA/RNA NON-SPECIFIC ENDONUCLEASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                               GLHDTEDKIKQYVE----GSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSSFILPHR
                                                                                                                                                                                                                                                                                         ERROR)
ERROR)
                                                                                                                                                                                                                                                                                                                                                                                  27;
                                                                                                                                                                                                                                                                                                                                                         299;
                                                                                                                                                                                                                                                                                                                                                                                                                                    SQKAMDDTFYLSNVAPQVPHLNQNAWNNLEKYSRSLTRTY----QNVYVCTGPLF
                                                                                                                                                                                                                           Transit
                                                                                                                                                                                                                                                                                         PROBABLE
PROBABLE
                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                   CRC64;
                                                                                                                                                                             InterPro; IPR001604; -.
InterPro; IPR001604; -.
Pfam; PF01223; Endonuclease; 1.
PROSITE; PS01070; NUCLEASE_NON_SPEC; 1.
Hydrolase; Nuclease; Endonuclease; Mitochondrion;
                                                                                                                                                                                                                                                                                                                                                                                  41;
                                                                                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                        -> S (IN REF. 3;
-> S (IN REF. 3;
B28FAFF56F04CFC7
                                                                                                                                                                                                                                                                                                                                                         Score 111.5; D
Pred. No. 0.6;
4; Mismatches
                                                                                                                                                                                                                                                               ENDONUCLEASE G
BY SIMILARITY.
                                                                                                                                                                                                                                                                                        -> S (IN REF
-> S (IN REF
                                                                                                                                                                                                                                                    MITOCHONDRION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              - LPRTEADGKSYVKYQVIGKNHVAVPTHFFKVLI-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14:47:09
                                                                                                                                                                                                                                                                                                                                                                                 24;
                                                                                                                                                                                                                                                  48 M
299 E
143 B
172 H
264 H
32261 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2001,
                                                                                                                                                                                                                                                                                                                                                         2.2%;
SUBUNIT: HOMODIMER.
SUBCELLULAR LOCATION: M
SIMILARITY: BELONGS TO
FAMILY.
                                                                                                                                                                   CAA51320.1;
                                                                                                                                                                                                                                                                                                                                                                     Similarity 25.8
32; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             completed: July 19,
ne: 171 sec
                                                                                                                                                                                                                                                                                                                  299 AA;
                                                                                                                                                                                                                                                    143
143
172
264
                                                                                                                                                                  EMBL; X72802;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            258
                                                                                                                                                                                                                         Hydrolase;
Magnesium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PVDE
                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 32
                                                                                                                                                                                                                                                                           ACT_SITE
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                    TRANSIT
                                                                                                                                                                                                                                                                 CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                      153
                                                                                                                                                                                                                                                                                                                                                                                                             741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Job time:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   852
                                                                                                                                                                                                                                                                                                                                                                                                                                                               797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Search
엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

• • .

•

69-

-483 - 831

60

sn

```
4.5
Compugen Ltd.
 GenCore version (c) 1993 - 2000
          Copyright
```

model ΜS - protein search, using OM protein July 19, Run on

•• 2001, 14:43:57

updates/sec 42.51 Seconds alignments) Search time (without a 2847.779)

US-09-483-831-69 5019 1 MARRSSFQSCQIIS score:

Title: Perfect

RSYPEILTLKTYLHTYESEI MARRSSFQSCQIISLFTFAV Sequence:

S 91

> BLOSUM62 Gapop 10.0 Scoring table:

0.5 Gapext

Searched:

425026 hits satisfying chosen parameters of number Total

425026 seqs, 132305027 residues

Minimum DB

length: 0
length: 2000000000 sed DB Maximum

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

SPTREMBL\_16:\*

sp\_archea:\*
sp\_bacteria:\*
sp\_fungi:\*
sp\_human:\*
sp\_invertebrate:\*
sp\_mammal:\*
sp\_mhc:\*
sp\_organelle:\*

sp\_plant:\*
sp\_rodent:\* sp\_phage:\*

sp\_unclassified: sp\_vertebrate:\* virus: sp\_ No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, a derived by analysis of the total score distribution. Pred. No. score gand is

## SUMMARIES

Score	Φ+		מכ	, OI		Description
re	$O^{-1}$	Length	DB :	. di	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Description
019		915	4	1382		13
89	ო	863	4	382		$\vdash$
99	щ	863	4	15		5117 homo sa
φ.	œ.	9	H	9R1		Q9rle6 mus
30	ر. م	8	11	Φ		Q64610 rattus norv
08	$\ddot{-}$	875	11	6349		6349
08	$\vec{\boldsymbol{\tau}}$	<u></u>	H	4926		9767
08	ij	~	11	g		P97675 rattus norv
7	ij	$\sim$	ΙĮ	064		7064
0	0	$\sim$	₩	1463		463
5	<u>ب</u>	845	4	Q9NPZ3	•	3 homos
S.	39.0	$^{\circ}$	4	Q9P1P6		plp6 homo s
15	ς.	817	14	07		90761 fowlpox v
S)	∾.	817	14	σ		디
9	ά.	457		Q9SU82		82 8
$\leftarrow$	₹.	479		Q9FS13		13 spinac
$\mathbf{H}$	ά.	496	10	SU8		83 a
٠	ς.	~		042974		42974 oryza
$\leftarrow$	сч :	829	Ŋ	P90754		P90754 caenorhabd

Q9su81 arabidopsis	schizosa	Q9nqm9 homo sapien	O88827 rattus norv	O69013 zymomonas m		ons was	omo sap	Q9pab9 xylella fas	P90755 caenorhabdi	Q9h515 homo sapien	s t	Q9qyv2 rattus norv	Q17540 caenorhabdi	rabidops	enc	Q14555 homo sapien	Jara	r1d5	O45359 caenorhabdi	Q9jm99 mus musculu	9954 s	O55767 chilo iride		2954 ho	Q9z4z4 streptomyce
S	3 094323	6WON60 1	11 088827		1 Q9Y6X5	11 Q9EQG7	Ů	2 Q9PAB9		_	•	-4	_	0	_	Ü	3 Q9PTU	ᆸ	Ü	11 Q9JM99	2 069954	14 055767	9TR	09295	2 Q9Z4Z4
9	485	S	S	8	23	~	77	33	74	52	81	51	14	33	S	45	85	4	09		46	œ	32	04	4
2		0	0	0	0	ь О	•	•	•	•		•	•		•		•	•	•		•	•	•	•	2.6
O	9.	53	9	52	51	₹	ف	9	9	42	4.	თ	7	<del>.</del>	23	23	17	Ö	16	ъ Ф	٠. ك	4	3	$\mathbf{c}$	132
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

## ALIGNMENTS

Murata J., Lee H.Y., Clair T., Krutzsch H.C., Arestad A.A.,
Sobel M.E., Liotta L.A., Stracke M.L.;
"cDNA cloning of the human tumor motility-stimulating protein,
autotaxin, reveals a homology with phosphodiesterases.";
J. Biol. Chem. 269:30479-30484(1994).
EMBL; L35594; AAA64785.1; -.
InterPro; IPR001212; -.
InterPro; IPR001504; -.
InterPro; IPR001504; -.
R InterPro; IPR002591; -.
Pfam; PF01033; Somatomedin\_B; 2.
Pfam; PF01663; Phosphodiest; 1.
PRINTS; PR00622; SOMATOMEDINB.
R SMART; SM00477; NUC; 1.
SEQUENCE 915 AA; 105246 MW; 2BE6135CCD837780 CRC64; Euteleostomi Ношо Vertebrata;
i; Hominidae; Created) Last sequence update) Last annotation update) AA Craniata; Vo Catarrhini; 915 PRT; PubMed=7982964; Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; C.
Mammalia; Eutheria; Primates; C.
NCBI\_TaxID=9606;
[1]
SEQUENCE FROM N.A.
TISSUE=TUMOR;
MEDLINE=95074054; PubMed=798296 01 01 16 PRELIMINARY; Q13827; Q13827; Q1-NOV-1996 (TrEMBLrel. 01-NOV-1996 (TrEMBLrel. 01-MAR-2001 (TrEMBLrel. AUTOTAXIN. RESULT Q13827 DT DT DE П

Gaps ö Length 915; Indels DB 4; . 0 Score 5019; Pred. No. 0; ; Mismatches ö 100.0%; 100.0%; Conservative 1 Similarity 915; Conser Query Match Local Best Loc Matches

ö

9 9 g ğ

GRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENACHC 120 61 ò

```
540
                                                                                                                                            540
                                                                                                                                                     900
                                                                                                                                                               900
                                                                                                                                                                         099
                                                                                                                                                                                  099
                                                                                                                                                                                            720
                                                                                                                                                                                                      20
                                                                                                                                                                                                               780
                                                                                                                                                                                                                         780
                                                                                                                                                                                                                                  840
                                                                                                                                                                                                                                                      900
                                                                                                                                                                                                                                                               900
                                 240
                                                              300
                                                                        360
                                                                                 360
                                                                                           420
                                                                                                     420
                                                                                                               480
                                                                                                                        480
                                                                                                                                                                                                                                            0
                                           240
                                                     300
    0
              0
                        0
                                                                                                                                                                                                                                             84
              œ
    7
                        8
                                                                                           KIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLKLRRCVNVIFVGDHGMEDVTCD
                                                                                                                                                                                                                                                     KGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDA
                                                     -ひ
              eostomi
GRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENACH
                                                                                                                                                                                                                                                                                                                                                  Eutel
                                                                                                                                                                                                                                                                                                                                                   ·- 0
                                                                                                                                                                                                                                                                                                                                                  ertebrata;
Hominidae
                                                                                                                                                                                                                                                                                                                          update)
on updat
                                                                                                                                                                                                                                                                                                                          sequence un annotation
                                                                                                                                                                                                                                                                                                                                                  Ver
                                                                                                                                                                                                                                                                                                                                                  Craniata; V
Catarrhini;
                                                                                                                                                                                                                                                                                                           863
                                                                                                                                                                                                                                                                                                                    Created)
Last sequ
Last anno
                                                                                                                                                                                                                                                                                                            PRT
                                                                                                                                                                                                                                                                                                                                                  Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                     01
01
16
                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                         91
                                                                                                                                                                                                                                                                                   91
                                                                                                                                                                                                                                                                                                                    (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                         Q13822 PRELIMINAF
Q13822;
01-NOV-1996 (TrEMBLre)
01-NOV-1996 (TrEMBLre)
01-MAR-2001 (TrEMBLre)
AUTOTAXIN-T.
ATX-T.
HOMO Sapiens (Human).
Eukaryota; Metazoa; C}
Mammalia; Eutheria; Pr
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                         ILTLKTYLHTYESEI
|||||||||||||
ILTLKTYLHTYESEI
                                                                                                                                                                                                                                                                                                  ^{\circ}
                                                                                                                                                                                                                                                      841
                                                                                                                                                                                                                                                                                   901
                                                                                                                                                               541
                                                                                                                                                                                                      199
                                                                                                                                                                                                               721
                                                                                                                                                                                                                         21
                                                                                                                                                                                                                                   81
                                                                                                                                                                                                                                            81
                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                         901
                                                                                                                                                                         601
                                                                                                                                                                                  601
                                                                                                                                                                                            661
                                                                                                     361
                                                                                                                                            481
    61
              21
                        121
                                  181
                                           181
                                                     241
                                                              241
                                                                       301
                                                                                  301
                                                                                            361
                                                                                                               421
                                                                                                                        421
                                                                                                                                   81
                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                  SULT
3822
                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                  RE
01
                                                                                                     Dp
                                                                                                                         d
                                                                                                                                            d
                                                                                                                                                               d
                                                                                                                                                                                  g
                                                                                                                                                                                                      d
                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                          Q
                                                                                  d
                                                                                                                                                                         δ
                                                                                                                                                                                            Q
                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                       Q
                        d
                                            d
                                                               임
                                                                                            ŏ
                                                                                                               δ
                                                                                                                                   Óλ
                                                                                                                                                      δ
               δ
                                  Q
                                                      δ
                                                                         δ
```

```
autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PSVYAFY SEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52
                                                                                                                                                                                                                                          of
                                                                                                                                                                                                            ĸ
                                                                                                                                                                                                            Torres
                                                                                                                                                                                                                                            expression
                                                               A.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \infty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                      J. Biol. ...

[2]
SEQUENCE FROM N.A.
TISSUE=TESTIS;
MEDLINE=96158950; PubMed=8579579;
A Lee H.Y., Murata J., Clair T., Polymeropoulos M.H., Tor
Manrow R.E., Liotta L.A., Stracke M.L.;
T "Cloning, chromosomal localization, and tissue express:
T from human teratocarcinoma cells.";
T Biochem. Biophys. Res. Commun. 218:714-719(1996).

REMBL; L46720; AAB00855.1;
Biochem. Biophys. Res. Commun. 218:714-719(1996).

REMBL; L46720; AAB00855.1;
DR InterPro; IPR001212;
InterPro; IPR001212;
DR Pfam; PF01033; Somatomedin_B; 2.
DR Pfam; PF01033; Somatomedin_B; 2.
DR Pfam; PF01663; Phosphodiest; 1.
DR PRINTS; PR00022; SOMATOMEDIN.B; 2.
**AART; SM0477; NUC; 1.
**AART; AART; 
                                           MEDLINE=95074054; PubMed=7982964;
Murata J., Lee H.Y., Clair T., Krutzsch H.C., Arestad
Sobel M.E., Liotta L.A., Stracke M.L.;
"cDNA cloning of the human tumor motility-stimulating
autotaxin, reveals a homology with phosphodiesterases
J. Biol. Chem. 269:30479-30484(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                        CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d. No. 0;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4681;
No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93.3<del>8</del>,
93.8<del>8</del>,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity 93.8
858; Conservative
               QUENCE FROM SSUE=TESTIS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 858
[1]
SEQUENCE
TISSUE=TE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                32
 a
a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
```

Н

Ç

0

8

```
999
                              720
                                            668
                                                          780
                                                                        728
                                                                                       840
                                                                                                     788
                                                                                                                    900
                                                                                                                                   848
                                                                                                                                                                                                                                                                                                                 -type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                     SFSQNCL
NGVNVISGPIFDYDYDGLHDTEDKIKQYVEGSSIPVPTHYYSIITSCLDFTQPADKCDGP
                                                                                                                    [±]
                                                                                                                                   [1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SFSONCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                         in
                                                                                                                                                                                                                                                      Euteleostomi
Homo.
                                                                                                                                                                                                                                                                                                  כי
                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                  Inazawa
                                                                                                                                                                                                                                                                                                                                                                                                                                            52;
                                                                                                                                                                                                                                                                                                                ĎĽ.
                                                                                                                                                                                                                                                                                                                      (PDNP2).
                            human
                                                                                                                                                                                                                                                                                                                                                                                                                             \bar{\mathbf{\omega}}
                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                 χ.,
                                                                                                                                                                                                                                                                                                                                                                                                       CRC64
                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                         update)
on update)
                                                                                                                                                                                                                                                        ·- 0
                                                                                                                                                                                                                                                      Vertebrata;
i; Hominidae
                                                                                                                                                                                                                                                                                                  Narita
                                                                                                                                                                                                                                                                                              Kawagoe H., Soma O., Goji J., Nishimura N., Narita
Nakamura H., Sano K.;
"Molecular cloning and chromosomal assignment of
phosphodiesterase I/nucleotide pyrophosphatase ges
Genomics 30:380-384(1995).
EMBL; D45421; BAA08260.1; -.
InterPro; IPR001212; -.
InterPro; IPR001212; -.
InterPro; IPR002591; -.
Pfam; PF01033; Somatomedin_B; 2.
Pfam; PF0163; Phosphodiest; 1.
PRINTS; PR00022; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDINB; 2.
SMART; SM00477; NUC; 1.
                                                                                                                                                                                                                                                                                                                of
                                                                                                                                                                                                                                                                                                                                                                                                                                           5;
                                                                                                                                                                                                                                                                                                                                                                                                       318EA28B1CEA7A55
                                                                                                                                                                                                                                                                                                                                                                                                                             4;
                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                 ono
                                                                                                                                                                                                    ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                    ed. No. 0;
Mismatches
                                                                                                                                                                                                                          sequence
annotatic
                                                                                                                                                                                                                                                      Craniata;
Catarrhini
                                                                                                                                                                                                                                                                                                                                                                                                                              .. 0
                                                                                                                                                                                                                                                                                                                                                                                                                            Score 4666;
Pred. No. 0
                                                                                                                                                                                                                                                                                          PubMed=8586446;
J., Goji J., Nishimura
                                                                                                                                                                                                                 Created)
Last sequ
Last anno
                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                           3,
                                                                                                                                                                                                                                                       .. ..
                                                                                                                                                                                                                                            Homo sapiens (Human).
Eukaryota; Metazoa; Chordata
Mammalia; Eutheria; Primates
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                            93.0%;
ilarity 93.4%;
Conservative
                                                                                                                                                                                                                 01,
01,
16,
                                                                                                                                                                                                Q15117,
Q15117;
Q15117;
01-NOV-1996 (TrEMBLrel. 01,
01-NOV-1996 (TrEMBLrel. 01,
01-MAR-2001 (TrEMBLrel. 16,
PHOSPHODIESTERASE I ALPHA.
                                                                                                                                                                                                    PRELIMINARY
                                                                                                                                                 ហ
                                                                                                                                                              സ
                                                                                                                                                 91
                                                                                                                                                               86
                                                                                                                                                 ILTLKTYLHTYESEI
                                                                                                                                                       /; <sub>b</sub>, AA;
                                                                                                                                                                                                                                                                           [1]
SEQUENCE FROM N.A.
MEDLINE=96163899;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
Les 855; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                             Match
                                                                                                                                                                                    \sim
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Ma
Best Loc
Matches
              549
601
                                           609
                                                          721
                                                                        699
                                                                                                     729
                                                                                                                    841
                                                                                                                                  789
                                                                                                                                                              849
                             661
                                                                                       81
                                                                                                                                                901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \boldsymbol{\vdash}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21
                                                                                                                                                                                    SULT
5117
                                                                                                                                                                                           511,
                                                                                                                                                                                    RE OFF
              g
                                                                                                                                                Óγ
                                                                                                                                                              q
                                                                                                                                                                                                          ŏ
                                           d
                                                          ğ
                                                                        d
                                                                                                     d
                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
Q
                                                                                       õ
                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
```

```
300
                                240
                                                                                             300
                                                                                                                              360
                                                                                                                                                             324
                                                                                                                                                                                                                           368
                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                          428
                                                                                                                                                                                                                                                                                                                                                      488
                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                                   099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -
KGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDA
                                                                                                                                                                                          SONCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SONCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SYGSPFTPAKRPKKVAPKRRQERPVAPPKKRRR
                                                                                                                                                                                                                                                                                                                       ы
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ·- (3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mα
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euteleostomi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : of mouse phosphodiesteras
alpha/autotaxin).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LSVSSFILPHRPDNEESCNSSEDESKWVEELMKMHTARVRDIEHLTSLDFFRKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Murina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \mathbf{c}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         O9R1E6 PRELIMINARY; PRT; 862 AA. O9R1E6; 01-MAY-2000 (TrEMBLrel. 13, Created) 01-MAY-2000 (TrEMBLrel. 13, Last sequence update) 01-MAR-2001 (TrEMBLrel. 16, Last annotation update) PHOSPHODIESTERASE I/NUCLEOTIDE PYROPHOSPHATASE (EC. MPPS2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ٠,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata
Sciurognathi; Murida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    assignment
tase (PD-I a
                                                                                                                                                                                                                                                           SKF
|---
SKF
                                                                                                                            SVYAFYSEQPDFSGHKYGPFGPEES:
                                                                                                                                                                                                                                                         Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .. ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pyrophosphatase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   J.-H.;
chromosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \mathbf{m}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. STRAIN=C57B/6; Sano K., Piao J.-H "Cloning and chroming and chro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ILTLKTYLHTYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                         69
                                                                                                                                                                                                                                                                                                                                                       429
    81
                                 81
                                                                                               241
                                                                                                                             301
                                                                                                                                                                                             61
                                                                                                                                                                                                                           325
                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                      489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           σ
                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                          81
                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84
                                                                                                                                                                                             ന
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SULT
R1E6
                                 엄
                                                                                               셤
                                                                                                                              QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                               ö
                                                                                                                                                                                                                            d
d
                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                          a
a
                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             回の
                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ğ
```

 $\boldsymbol{\omega}$ 

0

 $\boldsymbol{\omega}$ 

œ

Φ

```
120
                                                                                                                           180
                                                                                                                                               240
                                                                                                                                                         239
                                                                                                                                                                  300
                                                                                                                                                                            66
                                                                                                                                                                                      360
                                                                                                                                                                                               323
                                                                                                                                                                                                         420
                                                                                                                                                                                                                  367
                                                                                                                                                                                                                            80
                                                                                                                                                                                                                                     427
                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                        487
                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                                            547
                                                                                                                                                                                                                                                                                      999
                                                                                                                                                                                                                                                                                                607
                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                          87
                                                                                                                  119
                                                                                                                                     \boldsymbol{\varphi}
                                                                                                                                                                                                                                                                                                                   667
                                                                                                                                                                                                                                                                                                                                       27
                                                                                                                                                                                                                                                                                                                                                 O
                                                                                                                                                                                                                                                                                                                                                 84
                                                                           S
                                                                                    0
                                                                                    9
                                                                                              Ŋ
                                                                                                                                                                             S
                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                                                                                           ~
                                                                           Ga
                                                                                                                                                                                                        TRPNYPGIMYLQSDFDLGCTCDDKVEPKNKLDELNKRLHTKGSTEERHLLYGRPAVLYRT
                                                                                                                                                                                                                                                                                           .
                                                                 86
                                                                           \mathbf{c}
                                                                           S
                                                                 Length
                                                                           Indels
                                                   CRC64
  databa
                                                                 .
                                                                 11
                                                                          26;
                                                  641F8F1443E4F8B0
                                                                 DB
  EMBL/GenBank/DDBJ
                                                                4439.5;
No. 0;
                                                                          Mismatches
                                                                 Score
Pred.
                                   ^{\circ}
Submitted (JAN-1999) to the EMBL/EMBL; AF123542; AAD46480.1; -.
InterPro; IPR001212; -.
InterPro; IPR002591; -.
Pfam; PF01033; Somatomedin_B; 2.
Pfam; PF01663; Phosphodiest; 1.
PRINTS; PR00022; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDIN_B; SMART; SM00201; SO; 1.
Hydrolase.
SEQUENCE 862 AA; 98918 MW; 64
                                                                          30;
                                                                88.5%;
ilarity 88.1%;
Conservative 3
                                                                      Local Similarity
nes 806; Conser
                                                                 Match
                                                                 Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                548
                                                                                                                                                                                                                                                                                                                   608
                                                                                                                                                                                                                                                                                                                             721
                                                                                                        61
                                                                                                                 9
                                                                                                                                     20
                                                                                                                                               181
                                                                                                                                                        180
                                                                                                                                                                   241
                                                                                                                                                                             240
                                                                                                                                                                                      301
                                                                                                                                                                                               300
                                                                                                                                                                                                         361
                                                                                                                                                                                                                  324
                                                                                                                                                                                                                            21
                                                                                                                                                                                                                                      368
                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                         428
                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                            488
                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                       668
                                                                                                                                                                                                                                                                                                                                                 81
                                                                                                                                                                                                                                                                                                                                                          728
                                                                                              ~
                                                                                                                           121
                                                                                    \boldsymbol{\vdash}
                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                       <del>a</del>
  g
                                                                                                                                                                                               d
                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                            요
                                                                                                                                                                                                                                                                                                                                                           ದ್ದ
                                                                                              d
                                                                                                                  g
                                                                                                                                      d
                                                                                                                                                         D
                                                                                                                                                                                      Q
                                                                                                                                                                                                         Q
                                                                                                                                                                                                                  d
                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                             Q
                                                                                    Qγ
                                                                                                        ð
                                                                                                                            ð
                                                                                                                                               Qγ
                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                 ð
```

```
120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      353
                847
                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                    59
                                                                                                                                                                                                                           brain-specific
alpha) from rat
                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41
                                                                                                                                                                   Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YDPVFDATFHLRGREKFNHRWWGGQPLWITATKQGVKAGTFFWSVVIPHERRILTILRWL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PPKKRRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLKLRRCVNVIFVGDHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -PPLIIFSVDG
-DCEEIKAAECPAGFVRPPLIIFSVDG
                                                                                                                                                          Euteleostomi
Murinae; Ra
                                                                                                                                                                                                                                                                                                                                                                                    94;
                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                             a brain-
                                                                                                                                                                                                                                                                                                                                                                      Ø
                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                             CRC64
                                                                                                                                                                                                                                   (PD-I
                                                                                                                                                           Craniata; Vertebrata; I
Sciurognathi; Muridae;
                                                                                                               update)
"ndate)
                                                                                                                                                                                                                            of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     --CP-
                                                                                                                                                                                                                    , Sano K.;
and localization
pyrophosphatase (F
                                                                                                                                                                                                                                                                                                                                              ^{\circ}
                                                                                                                                                                                                                                                                                                                                                                      11;
                                                                                                                                                                                                                                                                                                                                                                                     28;
                                                                                                                                                                                                                                                                                                                                              8C5C0AFC5200797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PEDCLSRGDCCTNYQVVCKGESHWVDDAARNQSSECLQV-
                                                                                                                                                                                                                                                                                                                                                                      DB
                                                                                                          Created)
Last sequence up
Last annotation
.4.1).
                                                                                           AA
                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                     Score 4306;
Pred. No. 0
                                                                                           S
                                                                                                                                                                                           SEQUENCE FROM N.A.
STRAIN=SPRAGUE-DAWLEY; TISSUE=BRAIN;
MEDLINE=95050605; PubMed=7961762;
Narita M., Goji J., Nakamura H., Sano
"Molecular cloning, expression, and lo
phosphodiesterase I/nucleotide pyrophobrain.";
                                                                                                                                                                                                                                                   J. Biol. Chem. 269:28235-28242(1994)

EMBL; D28560; BAA05910.1; -.

InterPro; IPR001212; -.

InterPro; IPR001604; -.
                                                                                                                                                                                                                                                                                                                     ~
                                                                                           PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEDCLARGDCCTNYQVVCKGESHWVDD-
                                                                                                                                                                                                                                                                                                                      ,
B
                                                                                                                                                                                                                                                                                                      ij
                                                                                                                                                                                                                                                                                             ^{\circ}
                                                                                                                                                                                                                                                                                    InterPro; IPR002591; -.
Pfam; PF01033; Somatomedin_B; 2
Pfam; PF01663; Phosphodiest; 1.
PRINTS; PR00022; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDIN_B
SMART; SM00477; NUC; 1.
                                                                                                                                                                                                                                                                                                                                              MW;
                                                                                                                                                                                                                                                                                                                                                                                     33;
                                                                                                                                              Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 83.6%;
Matches 792; Conservative
                                                                                                                                                                                                                                                                                                                                             101309
                                                                                                                   01
16
3.
                                                                                                            01
                                                                                           PRELIMINARY
                                                                                                  O64610;
01-NOV-1996 (TrEMBLrel. 0
01-NOV-1996 (TrEMBLrel. 0
01-MAR-2001 (TrEMBLrel. 1
PHOSPHODIESTERASE I (EC 3
NPH-TYPE III.
                                                  862
                                 S
                                   9
                                 AA;
                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                              88
                                                                                                                                                                                                                                                                                                                                      Hydrolase
                                                                                                                                                                                                                                                                                                                                              EQUENCE
                                                                                           610
610
                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        354
                                                                                                                                                                                                                                                                                                                                                                                                                                                      09
                                                  848
                                                                                                                                                                                                                                                                                                                                                                                                       _
                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       291
                  788
                                   901
                                                                                                                                                                                                                                                                                                                                                                                                                      \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       294
   841
                                                                                          064
064
                                                                           RESULT
Q64610
                                                                                                                                                    П
                                                                                                          담담
                                                                                                                           DT
DE
GN
                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                   D
D
                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                   Q
```

Ø

Q

```
593
                                                          473
                                                                                                                                      533
                                                                                                                                                                           478
                                                                                                                                                                                                                                                                                             645
                                                                                                                                                                                                                                                                                                                                   598
                                                                                                                                                                                                                                                                                                                                                                          688
                                                                                                                                                                                                                                                                                                                                                                                                                                                    748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 al differentiation relationship to
                                                                                                                                                                                                                                                                                                                                                                                                             651
                    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                omi;
Ratt
SYTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                SKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYDA
                                                                                                                                   KPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARKPLDVYKKPSGKCFFQGDHGFDNKV
                                                                                                                                                    NSMQTVFVGYGPTFKYKTKVPPFENI ELY NVMCDLLGLKPAPNNGTHGSLNHLLRTNTFR
                                                                                                                                                                                                                                  SKWV
                                                                                                                                                                                                                                                                                                                                                                                          SKHENKKNLNGSVEPRKERHLLYGRPAVLYRTSYDILYHTDFESGYSEIFLMPLWTSYTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Euteleostomi
Murinae, Ra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EDE
                                                                                                                                                                                                                                                                                                                                                                           SEIFLMLLWT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rat neural
reveals rel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  odate)
update)
                                                                                                                                                                                                                                                                                                                                                                       -ERHLLYGRPAVLYRTRYDILYHTDFESGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ·- 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; Vertebrata
athi; Murida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9BA9FBFEF82DFBA6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.

STRAIN=SPRAQUE-DAWLEY; TISSUE=BRAIN;
MEDLINE=95247775; PubMed=7730366;
Deissler H., Lottspeich F., Rajewsky M.F.;
"Affinity purification and cDNA cloning of ra and tumor cell surface antigen gpl30RB13-6 rehuman and murine PC-1.";
J. Biol. Chem. 270:9849-9855(1995).
EMBL; Z47987; CAA88029.1; -.
InterPro; IPR001212; -.
InterPro; IPR001504; -.
InterPro; IPR002591; -.
Pfam; PF01033; Somatomedin_B; 2.
Pfam; PF01663; Phosphodiest; 1.
PROSITE; PS00524; SOMATOMEDIN_B; UNKNOWN_2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
Last sequence up
Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata;
Sciurogna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01,
01,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF01663; Phos
PROSITE; PS00524; S
SMART; SM00477; NUC
SEQUENCE 875 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q63490;
01-NOV-1996 (TrE
01-NOV-1996 (TrE
01-MAR-2001 (TrE
RB13-6 ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      163490
163490;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI
                 322
                                                                                            359
                                                                                                                                  474
                                                                                                                                                                        419
                                                                                                                                                                                                                                                   479
                                                                                                                                                                                                                                                                                                                               539
                                                                                                                                                                                                                                                                                                                                                                                                             599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   719
                                                        414
                                                                                                                                                                                                               534
                                                                                                                                                                                                                                                                                           594
                                                                                                                                                                                                                                                                                                                                                                        646
                                                                                                                                                                                                                                                                                                                                                                                                                                                   689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     []
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
Q63490
                                                                                            9
                                                                                                                                                                        d
                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC OCC OCC OCT REPRESENT THE STATE OF S
                                                         ð
                                                                                                                                  Š
                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                       φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

th

Leng

11

DB

2084;

core

Ñ

₽ 90

Query Match

```
11;
                                                           176
                                                                                                                                 278
                                                                                                                                                                    338
                          9
                                                                                                                                                                                                      398
                                                                                                                                                                                                                                                          419
                                                                                                                                                                                                                                                                           512
                                                                                                                                                                                                                                                                                                             572
                                                                                                                                                                                                                                                                                                                              528
                                                                                                                                                                                                                                                                                                                                                                                 687
                                                                                                                                                                                                                                                                                                                                                                                                  647
                                                                                                                                                                                                                                                                                                                                                                                                                   747
                                                                                                                                                                                                                                                                                                                                                                                                                                                      807
                                                                                                                                                                                                                                                                                                                                                                                                                                     707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           827
                          11
          S
                                   -5V
                                                                                                                                                                                                      KRKVAPKRRQERPVAPPKKRRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQL
                          GSCKGRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEEN
                                                                                               SYMKKGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDP
                                                                                                       -VIKALQLVDDAFGMLMEGLKQR
                                                                                                                                                                                                                                                 VSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYD
                                                                                                                                         VIPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                       AFLVTNMVPMYPAFKRVWNYFQRVLVKKYASERNGVNVISGPIFDYDYDGLHDTEDKIKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                --FSNN
                                                                                                                                                                                                                                                                                                                                                                                                                                     VPKPGDTSSLPPTVPDCLRADVRVDPSESQKCSFYLADQNIDHGFLYPPAIKGNNESQYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELNKRLHTKG----STEERHLLYGRPAVLYRTR-YDILYHTDFESGYSEIFLMLLWTSYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YVEGSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSSFILPHRPDNEESCNSSEDESKW
         Š
                                                                                                                                                                            SVPYESRIATLLQWLDLPKAERPSFYTIYVEEPDSAGHKSGPV----SAG-
                                                                                                                                                                                                                                          KLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSK - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
Last sequence update)
Last annotation update)
d. No. 9.6e-162
Mismatches 248
                                                                                                                                  VFDATFHLRGREKFNHRWWGGQPLWITATKQGVKAGTFFW-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
 Pred
  i; P)
160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P97676 PRELIMINARY;
P97676;
01-MAY-1997 (TrEMBLrel. 03, C
01-MAY-1997 (TrEMBLrel. 03, L
01-MAR-2001 (TrEMBLrel. 16, L
ALKALINE PHOSPHODIESTERASE.
Rattus norvegicus (Rat).
Similarity 43.5% 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                              • •
 Local S
nes 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7
Best Loc
Matches
                                                           117
                                                                             113
                                                                                              177
                                                                                                                                                                   279
                                                                                                                                                                                                      339
                                                                                                                                                                                                                                                          361
                                           53
                                                                                                                                  237
                                                                                                                                                   233
                                                                                                                                                                                                                       339
                                                                                                                                                                                                                                         399
                                                                                                                                                                                                                                                                           453
                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            868
                          57
                                                                                                                \boldsymbol{\omega}
                                                                                                                                                                                     3
                                                                                                                                                                                                                                                                                                              513
                                                                                                                                                                                                                                                                                                                              472
                                                                                                                                                                                                                                                                                                                                                                529
                                                                                                                                                                                                                                                                                                                                                                                 633
                                                                                                                                                                                                                                                                                                                                                                                                  588
                                                                                                                                                                                                                                                                                                                                                                                                                    688
                                                                                                                                                                                                                                                                                                                                                                                                                                      648
                                                                                                                                                                                                                                                                                                                                                                                                                                                       748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           768
                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                               57.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
P97676
                                           g
                                                                              pp
                                                                                                                D
                                                                                                                                                  d
                                                                                                                                                                                     qq
                                                                                                                                                                                                                        qq
                                                             ğ
                                                                                                ð
                                                                                                                                  Q
                                                                                                                                                                     δ
                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                              ρ
                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                ά
                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                  D
                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DT
DT
DE
OS
                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QY
```

```
11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                       ttus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and basolater
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAPNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLQSDFDLGCTCDDKVEPKNKLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -VIKALQLVDDAFGMLMEGLKQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VYKKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --NKGSSNC-EGGTHGYNNEFKSMEAIFLAHGPSFKEKTVIEPFENIEVYNLLCDLLHIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELNKRLHTKG----STEERHLLYGRPAVLYRTR-YDILYHTDFESGYSEIFLMLLWTSYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OVNORLNISGGEVSATEKTNIPFGRPRVIOKNKDHCLLYHREYVSGFGKAMKMPMWSSYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GSCKGRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KRKVAPKRRQERPVAPPKKRRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACHCSEDCLARGDCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LCSCADDCLQRKDCCTDYKAVCQGEVPWVTEACASSQEPQCPEGFDQPPVILFSMDGFRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VIPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRP
    Euteleostomi
                                                                                                                                                                  of
                                                                                                                           J. W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46
                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                     Murinae
                                                                                                                                                                                                                                                                                                                                                                                                                                                             87
                                                                                                                                                                    forms
                                                                                                                           Goding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -SAG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSK-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                     distinct
                                                                                                                                                                                                                                                                                                                                                                                                   CRC6
   Craniata; Vertebrata; I
Sciurognathi; Muridae;
                                                                                                                                                                                        apical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ***
                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 11;
0.6e-162;
les 248;
                                                                                                                                                                                                                                                                                                                                                                                                   EA
                                                                                                                              Trugnan
                                                                                                                                                                "Biochemical and molecular identification of dalkaline phosphodiesterase I expressed on the plasma membrane surfaces of rat hepatocytes.";
                                                                                                                                                                                                                                                                                                                                                                                                   3
                                                                                                                                                                                                                                                                                                                                                                                                   4205F263E8A93
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 2084; D
Pred. No. 9.6e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                          UNKNOWN_2
                                                                                                                            N.R
                                                                                                                                                                                alkaline phosphodiesterase I expresplasma membrane surfaces of rat hell Hepatology 25:995-1002(1997).

EMBL; U78788; AAB61536.1; -...
InterPro; IPR001212; -...
InterPro; IPR002591; -...
Pfam; PF01033; Somatomedin_B; 2...
Pfam; PF01663; Phosphodiest; 1...
PROSITE; PS00524; SOMATOMEDIN_B; USMART; SM00201; SO; 1...
SEQUENCE 875 AA; 99071 MW; 420
                                                                                                     PubMed=9096610;
lier D., Meerson
                                                                                                                                                                                                                                                                                                                                                                                                                                                            41.5%; Solarity 43.5%; P. Conservative 160;
   Chordata;
Rodentia;
                                                                                                                         Delautier
Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
les 386; Conser
                                                                                   SEQUENCE FROM N.A. MEDLINE=97250927;
                                                                                                                             Scott L.J.,
Maurice M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
    OCC OCC OXX OC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
```

```
11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \infty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          176
807
                       767
                                               867
                                                                       827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                P97675
P97675;
P97675;
01-MAY-1997 (TrEMBLrel. 03, Created)
01-MAY-1997 (TrEMBLrel. 03, Last sequence update)
01-MAY-1997 (TrEMBLrel. 16, Last annotation update)
ALKALINE PHOSPHODIESTERASE.
Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                           forms of and basolateral
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KRKVAPKRRQERPVAPPKKRRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ΛS--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GSCKGRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACHCSEDCLARGDCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VIPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRP
            AFLVTNMVPMYPAFKRVWNYFORVLVKKYASERNGVNVISGPIFDYDYDGLHDTEDKIKQ
                                                YVEGSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSSFILPHRPDNEESCNSSEDESKW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94;
                                                                                                                                                                                                                                                                                                                                                      Trugnan G., Goding J.W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               87
                                                                                              915
                                                                                                                      875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --SAG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                            molecular identification of distinct
fiesterase I expressed on the apical a
surfaces of rat hepatocytes.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CRC64
                                                                                                VEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESEI
                                                                                                            SVPYESRIATLLQWLDLPKAERPSFYTIYVEEPDSAGHKSGPV--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 11;
..7e-161;
les 249;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8FEB9A482173D377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VFDATFHLRGREKFNHRWWGGQPLWITATKQGVKAGTFFW--
                                                                                                                                                                                                                                                                                                                                                                                       alkaline phosphodiesterase I expressed on the plasma membrane surfaces of rat hepatocytes."; Hepatology 25:995-1002(1997).

EMBL; U78787; AAB61535.1; -.

InterPro; IPR001604; -.

InterPro; IPR002591; -.

InterPro; IPR002591; -.

Pfam; PF01033; Somatomedin_B; 2.

Pfam; PF01663; Phosphodiest; 1.

PROSITE; PS00524; SOMATOMEDIN_B; UNKNOWN_2.

SMART; SM00477; NUC; 1.

SEQUENCE 875 AA; 99166 MW; BFEB9A482173D37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 2081; D. Pred. No. 1.7e 9; Mismatches
                                                                                                                                                                                                                                                                                                                                                      N.R.,
                                                                                                                                                                                                                                                                                                                             STRAIN-SPRAGUE-DAWLEY;
MEDLINE-97250927; PubMed-9096610;
Scott L.J., Delautier D., Meerson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               41.5%;
ilarity 43.5%;
Conservative 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
Les 386; Conser
                                                                                                                                                                                                                                                                                           NCBI_TaxID=10116;
[1]
SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                "Biochemical and
                                                                                                                                                                                                                                                                                                                                                        Scott L.J.,
Maurice M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                            \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            237
                                                                                                  868
                                                                          768
   748
                            708
                                                  808
                                                                                                                                                            RESULT
P97675
                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                          DT
DT
                                                                                                                                                                                                                                               DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                   ΩI
                                                                                                                          g
                                                                                                                                                                                                                                  DŢ
                            g
                                                                          d
                                                                                                   ğ
                                                    δ
```

```
360
                                                                                                                                                                                                 471
                                                                                                                                                                                                                                             572
                                                                                                                                                                                                                                                                                                                                              632
                                                                                                                                                                                                                                                                                                                                                                                              587
                                                                                                                                                                                                                                                                                                                                                                                                                                                687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VIKALQLVDDAFGMLMEGLKQR
                                                  -FSNN
                                                                                                                                              -- NKGSSNC-EGGTHGYNNEFKSMEAIFLAHGPSFKEKTVIEPFENIEVYNLLCDLLHIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VYKKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLGLK
                                                                                                                                                                                                                                                                                                                                              PAPNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLQSDFDLGCTCDDKVEPKNKLD
                                                                                                                                                                                                                                                                                                                                                                                                                                             ELNKRLHTK - - - - GSTEERHLLYGRPAVLYRTR - YDILYHTDFESGYSEIFLMLLWTSYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AFLVTNMVPMYPAFKRVWNYFQRVLVKKYASERNGVNVISGPIFDYDYDGLHDTEDKIKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YVEGSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSSFILPHRPDNEESCNSSEDESKW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Vertebrata; Euteleostomi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROXIMAL;
                                             KLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ||| | | ||||||:| || |||::: :: ||| ||||| |:|: |
VEERFKAHIARVRDVELLTGLDFYQEKTQPVSEILQLKTYLPTFETII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CRC6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 2057.5; DB 1:
Pred. No. 1.4e-159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             D2F772C34A0C437A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
STRAIN-SPRAGUE-DAWLEY; TISSUE-SMALL INTESTINE,
Sano K.;
"Molecular cloning of phosphodiesterase I cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P70641;
01-FEB-1997 (TrEMBLrel. 02, Created)
01-FEB-1997 (TrEMBLrel. 02, Last sequence up
01-MAR-2001 (TrEMBLrel. 16, Last annotation
PHOSPHODIESTERASE I.
Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vert
Mammalia; Eutheria; Rodentia; Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF01033; Somatomedin_B; 2.
Pfam; PF01663; Phosphodiest; 1.
PROSITE; PS00524; SOMATOMEDIN_B; UNKNOWN_2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99328 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     intestine.";
Submitted (MAY-1994) to tl
EMBL; D30649; BAA06333.1;
InterPro; IPR001212; -.
InterPro; IPR001604; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SMART; SM00477; NUC; SEQUENCE 876 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR002591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Φ
                                                                                                                                                                                                                                             513
                                                399
                                                                                                361
                                                                                                                                             453
                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                           472
                                                                                                                                                                                                                                                                                                                                            573
                                                                                                                                                                                                                                                                                                                                                                                             529
                                                                                                                                                                                                                                                                                                                                                                                                                                             633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            828
 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
P70641
 d
                                                                                              g
                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SO DR RET BRAND DR BR
                                                 Qγ
                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
```

```
176
                                                                                                                                                                                   398
116
                                                                       236
                                                                                                           278
                                                                                                                                               338
                                                                                                                                                                  338
                                                                                                                                                                                                     360
                                                                                                                                                                                                                                         419
                                                                                                                                                                                                                                                                             471
                                                                                                                                                                                                                                                                                                                  528
                                                                                                                                                                                                                                                                                                                                                     587
                                                                                                                                                                                                                                                                                                                                                                                                            747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    866
                                                                                                                                                                                                                       52
                                                                                                                                                                                                                                                                                                                                                                       687
                                                                                                                                                                                                                                                                                                                                                                                                                              707
                                                                                                                                                                                                                                                                                                                                                                                                                                                807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  767
                                                                                                           -SV
                                                                                                                                                                                              : |: :| ||:|||||
-VIKALQLVDDAFGMLMEGLKQR
                                                                                                                                                                                                                                 GSCKGRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEEN
                                            SNN
                                                                                                                                                                                                                                                           SVDGFRA
                                                                        SYMKKGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDP
                                                                                                                                              KRKVAPKRRQERPVAPPKKRRRKIHRMDHYAAETRODKMTNPLREIDKIVGQLMDGLKQL
                                                                                                                                                                                                                                                                                                                                                                                                            VSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YVEGSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSSFILPHRPDNE-ESCNSSEDESK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAPNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLQSDFDLGCTCDDKVEPKNKLD
                                                                                                                                                                                                                                                                                                                                                                                          QVNQRLNLNRGEVSATEKTNLPFGRPRVIQKNKDHCLLYHREYVSGFGKAMKMPMWSSYT
                                                                                                                                                                                                                                                                                                                                                                                                                             VPKPGDTSSLPPTVPDCLRADVRVDPSESQKCSFYLADQNIDHGFLYPPAIKGNNESQYD
                                                                                                                                                                                                                                                                                                                                                                        -GSTEERHLLYGRPAVLYRTR-YDILYHTDFESGYSEIFLMLLWTSYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                    ACHCSEDCLARGDCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \omega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    )
(B)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      014638 PRELIMINARY; PRT; 875 AA. 014638; 01-JAN-1998 (TrEMBLrel. 05, Created) 01-JAN-1998 (TrEMBLrel. 05, Last sequence update) 01-JAR-2001 (TrEMBLrel. 16, Last annotation update) PHOSPHODIESTERASE I/NUCLEOTIDE PYROPHOSPHATASE BETA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chordata; Craniata; Vertebrata;
                                                                                                            VFDATFHLRGREKFNHRWWGGQPLWITATKQGVKAGTFFW-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             I BETA)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human)
Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (PHOSPHODIESTERASE PDNP3.
                                                                                                                                                                                                                                                                                                                                                                         ELNKRLHTK-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10
                                                                      177
                                                                                                                             233
                                   117
                                                                                                           237
                                                                                                                                                                  293
                                                                                                                                                                                                      339
                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                      529
                                                                                                                                                                                                                                                                                                                                                                                          588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    808
57
                                                                                         3
                                                                                                                                               σ
                                                                                                                                                                                    \boldsymbol{\sigma}
                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                            \mathbf{c}
                                                                                                                                                                                                                                                                                                 ന
                                                                                                                                                                                                                                                                                                                  472
                                                                                                                                                                                                                                                                                                                                                                        \mathbf{c}
                                                                                                                                                                                                                                                                                                                                                                                                            688
                                                                                                                                                                                                                                                                                                                                                                                                                              648
                                                                                                                                                                                                                                                                                                                                                                                                                                                748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           828
                                                                                                                                               27
                                                                                                                                                                                                                        39
                                                                                                                                                                                                                                                                                                 51
                                                                                                                                                                                                                                                                                                                                                                        63
                                                                                                                                                                                                                                                             Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
014638
                  ద
                                                      d
                                                                                         Б
                                                                                                                             d
                                                                                                                                                                  g
                                                                                                                                                                                                     d
                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                        ð
                                                                                                            ð
                                                                                                                                                Š
                                                                                                                                                                                    δ
                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                 ζ
                                                                                                                                                                                                                                                                                                                  D
                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        П
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
```

N

Gaps

95;

Indels

159;

Conservative

al Similarity 384; Conserv

Query Match Best Local S Matches 384

41.0%; 43.2%;

87

Length

11;

2

O

31 8 ı ð Ø 4

g

us

```
C2DD58248BDAC52E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 1955.5; D
Pred. No. 3e-151
                                      875
                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                         Z
                                                                                                                                                                                                                                                                                                     91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vo
Catarrhini;
845
                                                                                                                                                                                                                                                                                                               DIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESEI
                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PF01033; Somatomedin_B; 2.; PF01663; Phosphodiest; 1.
TS; PR00022; SOMATOMEDINB.
ITE; PS00524; SOMATOMEDIN_B;
T; SM00477; NUC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             96844 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        39.0%;
ilarity 42.2%;
Conservative 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the 5.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Peck A.;
Submitted (JUL-2000) to t
EMBL; AL117378; CAB99365.
InterPro; IPR001212; -.
InterPro; IPR001604; -.
                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (Human)
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 Similarity 378; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        [1]
SEQUENCE FROM N.A
Peck A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84
                                                                                                                                                                                                                                                                                                                                                                       Q9NPZ3;
Q9NPZ3;
01-OCT-2000 (
01-OCT-2000 (
01-MAR-2001 (
DJ131F15.2 (F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
Pfam; PF0
Pfam; PF0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; E PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SMART;
                                                                                                                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                                           PDNP1
                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                         841
         372
                                               429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 58
                                                                  526
                                                                                     482
                                                                                                         586
                                                                                                                            542
                                                                                                                                              642
                             466
                                                                                                                                                                  601
                                                                                                                                                                                     701
                                                                                                                                                                                                       661
                                                                                                                                                                                                                         761
                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                               821
                                                                                                                                                                                                                                                                                                     881
                                                                                                                                                                                                                                                                                                                                                    RESULT
Q9NPZ3
                                                                                                                                                                                                                                                                                                                                                                                 {\bf Q} {\bf Y}
                                               8
                                                                                      엄
                                                                                                                            d
                                                                                                                                                                  <del>Q</del>
                                                                                                                                                                                                        d
                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                         d
                                                                   Q
                                                                                                         8
                                                                                                                                              Q
                                                                                                                                                                                     ð
                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                     Q
                                                                    ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      371
                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                    63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              m
                                                                  (PDNP3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLI1FSVDGFRASYMKKGSKVMPN
                                                                                                                                                                                                                                                                                                                                                                                                                                SCQIISLFTFAVGVSICLGFTAHRIKRAEGWEEGPPTVLSDSPWTNISGSCKGRCFELQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENACHCSEDCLARG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -ERRILTIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRVAPKRRQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PVAPPKKRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLKLRRCVNVIFVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --RVIKALQVVDHAFGMLMEGLKQRNLHNCVNIILLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                   -QGSCRKKCFDASF
                                                                                                                                                                                                                                                                                                                                                                                                              111;
                                                                                                                                                                                                                                                                                                                                                                                           875
                                             MEDLINE-98008933; PubMed-9344668;
Piao J.-H., Goding J.W., Nakamura H., Sano K.;
"Molecular cloning and chromosomal localization of PD-Ibeta
new member of the human phosphodiesterase I genes.";
Genomics 45:412-415(1997).
                                                                                                                                                                                                                                                                                                                                                                                           Length
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                 es
                                                                                                                                                                                                                                                       database
                                                                                                                                                                                                                                                                                                                                                              CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---HdIMS-
                                                                                                       E OF 189-875 FROM N.A. Wohldmann P., Le T.; quence of Homo sapiens PAC clone DJ0988G15."; ed (SEP-1998) to the EMBL/GenBank/DDBJ databas
                                                                                                                                                                                                                  Ø
                                                                                                                                                                           databa
                                                                                                                                                                                                                 databa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSKFSNNAKYD-
                                                                                                                                                                                                                                                                                                                                                                                          4.
                                                                                                                                                                                                                                                                                                                                                              329CF41667497BC4
                                                                                                                                                                                                                                                                                                                                                                                         Score 2040.5; DB 4
Pred. No. 3.5e-158;
7; Mismatches 268;
                                                                                                                                                                                           SEQUENCE OF 189-875 FROM N.A.
Waterston R.H.;
Submitted (JAN-1999) to the EMBL/GenBank/DDBJ
                                                                                                                                                      SEQUENCE OF 189-875 FROM N.A.
Waterston R.H.;
Submitted (SEP-1998) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                      the EMBL/GenBank/DpBJ
                                                                                                                                                                                                                                                                                                                                  UNKNOWN_2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KWLDLPKAERPRFYTMYFEEPDSSGHAGGPVSA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KFNHRWWGGQPLWITATKQGVKAGTFFW-
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACIVLLALLVIMSLGLGLGLGLRKLEK -
                                                                                                                                                                                                                                                                                                  InterPro; IPR002591; -.
Pfam; PF01033; Somatomedin_B; 2.
Pfam; PF01663; Phosphodiest; 1.
PROSITE; PS00524; SOMATOMEDIN_B; SMART; SM00477; NUC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                             177;
                                                                                                                                                                                                                                                                                                                                                             100096 MW;
                                                                                                                                                                                                                                   FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                          40.7%;
                                                                                                                                                                                                                                          Waterston R.;
Submitted (JAN-1999) to the
EMBL; AF005632; AAC51813.1;
EMBL; AC005587; AAD05192.1;
                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                       SEQUENCE OF 189-875 FR
Hou S., Wohldmann P.,
"The sequence of Homo
Submitted (SEP-1998) t
                                                                                                                                                                                                                                                                                InterPro; IPR001212;
InterPro; IPR001604;
InterPro; IPR002591;
                                                                                                                                                                                                                                   189-875
                                                                                                                                                                                                                                                                                                                                                                                                   1 Similarity 379; Conser
                                                                                                                                                                                                                                                                                                                                                             875 AA;
                             N.A
                  [1]
SEQUENCE FROM N.
TISSUE=PROSTATE;
         NCBI_TaxID=9606
                                                                                                                                                                                                                                   OF
                                                                                                                                                                                                                                                                                                                                           SMART; SM(
Hydrolase.
                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 379
                                                                                     Genomics
[2]
                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                   24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 189
                                                                                                                                                                                                                                                                                                                                                                                                                                σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     337
                                                                                                                                                                                                                         5
                                                                                                                                                                                     4
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QΫ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Óζ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
```

```
19
                                                                                                                                                                                                                                                                                                                                               720
                                                                                                                                                                                                                                                                                                                                                                                                              780
              428
                                             525
                                                                                                              585
                                                                                                                                                                                                                                               700
                                                                                                                                                                                                                                                                                                               760
                                                                                                                                                                                                                                                                                                                                                                               820
                                                                                                                                                                                                                                                                                                                                                                                                                                                880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                840
                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SCKGRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENA
                                                                                                                               DHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLGLKPAPNNGTHGSLNH
                                                                                                                                                                                                                                                 GSTEERHLLYGRPAVLYR-TRYDILYHTDFESGYSEIFLMLLWTSYTVSKQAEVSSVPDH
                                                                                                                                                                                                                                                                                                                                                                               CKKPDQHFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARKPLDVYKKPSGKCFFQG
                                                                               -LAVRSKSNTNC-GGG
                                                                                                                                                                                                LTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYDAFLVTNMVPMYPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                YSIITSCLDFTQPADKCDGPLSVSSFILPHRPDNEESCNSSEDESKWVEELMKMHTARVR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi
Homo.
                                                                                                                                                                                LLRTNTFRPTMPEEVTRPNYPGIMYLQSDFDLGCTCDDKVEPKNKLDELNKRLHTK-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11-OCT-2000 (TrEMBLrel. 15, Created)
11-OCT-2000 (TrEMBLrel. 15, Last sequence update)
11-MAR-2001 (TrEMBLrel. 16, Last annotation update)
13-MAR-2001 (TrEMBLrel. 16, Last annotation update)
13-MAR-2001 (TrEMBLrel. 16, Last annotation update)
14-MAR-2001 (PHOSPHODIESTERASE I/NUCLEOTIDE PYROPHOSPHATASE)
15-MONOLOGOUS TO MOUSE LY-41 ANTIGEN) (PC1, NPPS)) (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ::
-
-
-
-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>-</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>-</u>
-
-
-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -PKAI IANLT
```

Trischitta

```
279
                                                                                                                                                                                                                                                                                                                            263
                                                                                                                                                                                                                    203
                                                                                                                                                                                                                                                                                                                                                                                                                                      308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  789
                                                  -VIKALQRVDGMVGMLMDGLKELN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YMKKGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLGLKPA
SCKGRCFE-RTFG--NCRCDAACVELGNCCLDYQETCIEPEHIWTCNKFRCGEKRLTRSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RKVAPKRRQERPVAPPKKRRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ---SGFHGSDNVFSNMQALFVGYGPGFKHGIEADTFENIEVYNLMCDLLNLTPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NKLDELNKRLHTKGSTEE--RH--LLYGRPAVLYR-TRYDILYHTDFESGYSEIFLMLLW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --IEDFQTQFNLTVAEEKIIKHETLPYGRPRVLQKENTICLLSQHQFMSGYSQDILMPLW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TSYTVSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DKIKQ----YVEGSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSSFILPHRPDNEESCN
                                                                                                                                                                                                                                                                                                                           MNASFSLKSKEKFNPEWYKGEPIWVTAKYQGLKSGTFFWPGSDVEINGIFPDIYKMYNGS
                                                                                                                                                                                                                                                                                                                                                                                IPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --SKFSNNAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YDPKAIIANLTCKKPDQHFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARKPLDVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --DLGCTCDDKVEPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ||:|:| : ||||| :| : |: || :| :: | |:| |:| |:| |:| |:| |:| | ::| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| |:| 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ::
=
=
=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSEDESKWVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESE
::| |||||: :| ||:||:|| ||: ||
HGKHDSSWVEELLMLHRARITDYEHITGLSFYQQRKEPVSDILKLKTHLPTFSQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIR--
                                                                                                                                                                                                                                                                                                                                                                                                                                VPFEERILAVLQWLQLPKDERPHFYTLYLEEPDSSGHSYGPVSSE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLQSDF----
                                                                                                                                                                                                                                                                         FDATFHLRGREKFNHRWWGGQPLWITATKQGVKAGTFFW-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RKYCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09P1P6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12
                                                                                                                                                                                                                                                                                                                        204
                                                                                                                                                                                                                                                                                                                                                                             280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   332
                                                      118
                                                                                                                                                                                                                                                                      238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        455
 27
                                                                                                          84
                                                                                                                                                        178
                                                                                                                                                                                                                144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         790
                                                                                                                                                                                                                                                                                                                                                                                                                                264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09P1P6
                                                                                                         ದ್ದ
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            da
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   П
                                                      δ
                                                                                                                                                              δŽ
                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
```

```
d
                                              dd
ð
                              ð
                                                             ð
                                                                             d
                                                                                            ò
                                                                                                            셤
                                                                                                                                           셤
                                                                                                                                                                          d
                                                                                                                                                                                                         d
                                                                                                                                                                                                                                       QQ
                                                                                                                           ð
                                                                                                                                                          ò
                                                                                                                                                                                         Q
                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                Euteleostomi
                                                                                                                                                                                                                Craniata; Vertebrata; Eutel Catarrhini; Hominidae; Homo
                                                                                                                                                                        Created)
Last sequence update)
Last annotation update
                                                                                                                                                                                                       Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                        15,
15,
16,
                                                                                                                                                                         (TrEMBLrel.
(TrEMBLrel.
(TrEMBLrel.
                                                                                                                                                                                                                                               FROM N.A
                                                                                                                                                                                                                              NCBI_TaxID=9606;
[1]
                                                                                                                                                                        1-OCT-2000
1-OCT-2000
1-MAR-2001
                                                                                                                                                                                                                                        [1]
SEQUENCE
                                                                                                                                                                Q9P1P6;
01-OCT-
01-OCT-
01-MAR-
                                                                                                                                                                                                PDNP1
                                                                                                                                                                 AC OC OC OX OX OX OX OX OX OX
```

```
279
                                                                                                                                                                                                                                                                                                                                                                                   177
                                                                                                                                                                                                                                                                                                                                                                                                                    237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        39
                                                                                                                                                                                                                                                                                                                                                  11,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        m
                                                                                                                                                                                                                                                                                                                                                   SCKGRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENA
                                                                                                                                                                                                                                                                                                                                                                                    CHCSEDCLARGDCCTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRAS
                                                                                                                                                                                                                                                                                                                                                                                            -VIKALQRVDGMVGMLMDGLKELN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SCKGRCFE-RTFG--NCRCDAACVELGNCCLDYQETCIEPEHIWTCNKFRCGEKRLTRSL
                                                                                                                                                                                                                                                                                                                                                                                                                      YMKKGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPV
                                                                                                                                                                                                                                                                                                                                                                                                                              RKVAPKRRQERPVAPPKKRRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IPHERRILTILRWLTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SKFSNNAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     925
                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                   Indels
         databases
                                                                                                                                                                                                                                                                                         CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LRRCVNVIFVGDHGMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OECAA063801CAFEB
                                                                                                                                                                                                                                                                                                                 Score 1955.5; DB 4
Pred. No. 3.4e-151;
; Mismatches 252;
         enBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       F
                                                                                                                                                                                                                                                                                                                                                                                                                                                       FDATFHLRGREKFNHRWWGGQPLWITATKQGVKAGTF
                    JOINED.
                                                                                                                                                                                                                                                                         SOMATOMEDIN_B;
                                                                                                                                                                                                                                        Pfam; PF01663; Phosphodiest; 1.
PRINTS; PR00022; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDIN_B
SMART; SM00477; NUC; 1.
SEQUENCE 925 AA:
                                                                                                                                                                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                 150;
                                                                                                                                                                                                                                                                                         MW.;
                       1280; AAF36024.1;
1281; AAF36094.1;
1283; AAF36094.1;
1285; AAF36094.1;
1286; AAF36094.1;
1289; AAF36094.1;
10292; AAF36094.1;
10293; AAF36094.1;
10294; AAF36094.1;
10294; AAF36094.1;
10296; AAF36094.1
10296; AAF36094.1
10296; AAF36094.1
10299; AAF36094.1
10300; AAF36094.1
110301; AAF36094.1
110302; AAF36094.1
110303; AAF36094.1
110303; AAF36094.1
110303; AAF36094.1
         the
                                                                                                                                                                                                                                                                                                                    ٠.
Pizzuti A., Tri
DEC-1998) to the
304; AAF36094.1;
280; AAF36094.1;
                                                                                                                                                                                                                                                                                                                 39.08
                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                          Local Similarity
Les 378; Conser
              AF110280;
AF110281;
AF110281;
AF110283;
AF110284;
AF110286;
AF110289;
AF110290;
AF110292;
AF110294;
AF110296;
AF110299;
AF110399;
AF110300;
AF110300;
AF110303;
                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 378
                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                        InterPro;
Pfam; PF0
Pfam; PF0
PRINTS; P
                                                                                                                                                                                                                                                                       PROSITE;
SMART; SN
SEQUENCE
              EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                  EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                           EMBL;
EMBL;
EMBL;
                                                                                                                                                                                              EMBL;
EMBL;
                                                                                                                                                                    EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                               EMBL;
                                                                                          EMBL
                                                                                                                                                                                                                                                                                                                                                                                    118
                                                                                                                                                                                                                                                                                                                                                                                                                     178
                                                                                                                                                                                                                                                                                                                                                                                                                                                      238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22
                                                                                                                                                                                                                                                                                                                                                   \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                                                                                                   107
                                                                                                                                                                                                                                                                                                                                                                                                    164
                                                                                                                                                                                                                                                                                                                                                                                                                                     224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             469
                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          œ
```

σ

 $\omega$ 

 $\boldsymbol{\omega}$ 

σ

```
DLMEHGVTAP-MRPVYPTNTFPNLYSIVTGLYPISHGITDNEFIDRGTDIEFTIASEETE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=10261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM Afonso C.L., 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9J5H1;
Q9J5H1;
01-OCT-2000 (
01-OCT-2000 (
01-MAR-2001 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Viruses; dsD
Avipoxvirus.
                                                                                                                                                                                                                                                   FRP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fowl pox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FPV030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14
                                                                                                                                                                                                                                                                                                                                                                                    899
                                                                                                                                                                                                                                                                                                                                                                                                                         726
                                                                                                                                                                                                                                                                                                                                                                                                                                           877
                                                                                                                                                                                                                                                                   505
                                                                                                                                                                                                                                                                                                                                              614
                                                                                                                                                                                                                                                                                                                                                                                                                                                              786
 145
                   251
                                                                           264
                                                                                              353
                                                                                                                                   413
                                                                                                                                                                        472
                                                                                                                                                                                                             532
                                                                                                                                                                                                                               445
                                                                                                                                                                                                                                                  592
                                                                                                                                                                                                                                                                                        643
                                                                                                                                                                                                                                                                                                        556
                                                                                                                                                                                                                                                                                                                            702
                                                                                                                                                                                                                                                                                                                                                                 762
                                                                                                                                                                                                                                                                                                                                                                                                      819
                                      204
                                                        293
                                                                                                                 291
                                                                                                                                                     332
                                                                                                                                                                                           391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
Q9J5H1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ID
AC
DT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P
                                                                                                                g
                                                                                                                                                     g
                                                                                                                                                                                          g
                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                    p
                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dp
                                      g
                                                                                              Q
                                                                                                                                   Q
                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                        Q
                                                                                                                                                                        ğ
                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    250
                   582
                                      628
                                                                           683
                                                                                              692
                                                                                                                 743
                                                                                                                                   750
                                                                                                                                                      802
                                                                                                                                                                        810
                                                                                                                                                                                           859
                                                                                                                                                                                                             869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  144
574
                                                        634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -HYDROXY-TERMINATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Skinner M.A.;
alpha-SNAP,
profein ":
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                    Chordopoxvirinae
                                                                                                                                                    - CPPEFERPPLILIAMNGFRYDYLNKWEKYIPTIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTNYOVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRASYMKKGSKVMPNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDATFHLRGREKF
KKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLGLKPA
                                                                           NKLDELNKRLHTKGSTEE--RH--LLYGRPAVLYR-TRYDILYHTDFESGYSEIFLMLLW
                                                                                    --IEDFQTQFNLTVAEEKIIKHETLPYGRPRVLQKENTICLLSQHQFMSGYSQDILMPLW
                                                                                                                           DKIKQ---YVEGSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSSFILPHRPDNEESCN
                                                                                                                                                                                                    -SGFHGSDNVFSNMQALFVGYGPGFKHGIEADTFENIEVYNLMCDLLNLTPA
                                      - DLGCTCDDKVEPK
                                                                                                                 TSYTVSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPE
                                                protein
                                                                                                                                                                                                                                914
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Skinner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           132;
                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5'-NUCLEOTIDES' 3'-HYDROXY-TE
                                                                                                                                                                                                                               SSEDESKWVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESE
                                                                                                                                                                                                                                         : : | | | | | | | : | : | | : | | : | | | : : | HGKHDSSWVEELLMLHRARITDVEHITGLSFYQQRKEPVSDILKLKTHLPTFSQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         817
                                                                                                                                                                                                                                                                                                                01-NOV-1998 (TrEMBLrel. 08, Created)
01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
ALKALINE PHOSPHODIESTERASE I (EC 3.1.4.1) (5'-EXONUCLEASE)
NUCLEOTIDE PHOSPHODIESTERASE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Green P., Shaw K., Snomologs of cellular a secreted nematode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64
                                                                                                                                                                                                                                                                                                                                                                                     stage; Poxviridae;
                                      PNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLQSDF---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 14;
.9e-85;
es 276;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Green P., Series of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CB68DA0508CC568E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REMOVES
                                                                                                                                                                                                                                                                                                                                                                                                                                                     S.M., Anwar M.A., Thomas W., Green P. virus encodes nonessential homologs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TERMINI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d. No. 1.94 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1151;
                                                                                                                                                                                                                                                                                                817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HYDROLYTICALLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and an orphan human homolog of irol. 72:6742-6751(1998).
CATALYTIC ACTIVITY: HYDROLYTICALI SUCCESSIVELY FROM THE 3'-HYDROXY OLIGO-NUCLEOTIDES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred
                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN=FP-9;
MEDLINE=98325194; Pubmed=9658122;
                                                                                                                                                                                                                                                                                                                                                                                  Viruses; dsDNA viruses, no RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MΨ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Phosphodiest; NUC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22.98;
32.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAA07014.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                PRELIMINARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR001604;
InterPro; IPR002591;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 Similarity
263; Conser
                                                                                                                                                                                                                                                                                                                                                                                            Avipoxvirus.
NCBI_TaxID=10261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <del>..</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF01663; 1
SMART; SM00477;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AJ006408;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            817
                                                                                                                                                                                                                                                                                                                                                                          Fowlpox virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                     S.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CISFOVT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PF0166
                  RKYCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Fowlpox v
PC-1, and
J. Virol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hydrolase.
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Laidlaw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                         090761;
                                                                                                                                                                                                                                                                                               090761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best_Loc
Matches
                                                                                                                                                                                                                                                 870
Ŋ
                   527
                                                        583
                                                                           629
                                                                                             635
                                                                                                                684
                                                                                                                                   693
                                                                                                                                                     744
                                                                                                                                                                       751
                                                                                                                                                                                          803
                                                                                                                                                                                                            811
                                                                                                                                                                                                                               860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   191
                                      S
                                      57
                                                                                                                                                                                                                                                                             RESULT
090761
                                                                                                                                                                                                                                                                                                         RA
RT
RT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DR DR DR SO SO SO
                   Б
                                                        q
                                                                                             엄
                                                                                                                                  d
                                                                                                                                                                        d
                                                                                                                                                                                                            g
                                                                                                                                                                                                                              ά
                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                      ð
                                                                           Q
                                                                                                                 ğ
                                                                                                                                                      Qγ
                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
```

```
263
                                                                352
                                                                                                                                                                                                                                                                                                                                 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   78
                                                                                                                                                                                                                                                                                                                                                                                                                    STEERHLLYGRPAVLY-RTRYDILYHTDFESGYSEIFLMLLWTSYTVSKQAEVSSVPDHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARKPLDVYKKPSGKCFFQGDHGFDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HYYSIITSCLDFTQPADKCDGPLSVSSFILPHRPD-NEESCNSSEDES-KWVEELMKMHT
                                                                                                                               APPKKRRRKIHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLKLRRCVNVIFVGDH
                                                                                                                                                                                                                   -TMPEEVTRPNYPGIMYLQSDFDLGCTCD--DKVEPKNKLDELNKRLHTKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  --IPHERRILTILRW
                                                               LTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPV
                                                                                                                                                  -TDDERVGKALEKVDKAIALLMKGLKDLQLIGCANLILVSDH
                                                                                                                                                                                                  GMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSKFSNNAK-YDPKAIIANLTCKKPDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYDAFLVTNMVPMYPAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KRVWNYFQRVLVKKYASERNGVNVISGPIFDYDYDGLHDTEDKIKQ----YVEGSSIPVPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chordopoxvirina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 N.A.
Tulman E.R., Lu Z., Zsak L., Kutish G.F., Rock D.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         그
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rock
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
ORF FPV030 ALKALINE PHOSPHODIESTERASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Poxviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kutish
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ARVRDIEHLTSLDFFRKTSRSYPEILTLKTYL 908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      817
--SW--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |::|||:||:||:||:|
VRIKDIETVTSMSFYRNVYKTSSNVAYLKTYM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=20193820; PubMed=10729156;
Afonso C.L., Tulman E.R., Lu Z., Zsak
"The genome of fowlpox virus.";
J. Virol. 74:3815-3831(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        stage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                LKMDTGYRPYFYALYLEEPGSSGYEYG-
NHRWWGGQPLWITATKQGVKAGTFFW-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        no RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dsDNA viruses,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY
```

```
21
                                                                                                                                                                                                                                 250
                                                                                                                                                                                                                                                       203
                                                                                                                                                                                                                                                                                                  263
                                                                                                                                                                                                                                                                                                                                            290
                                                                                                                                                                                                                                                                                                                                                                412
                                                                                                                                                                                                                                                                                                                                                                                                                                 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      876
                                                                                                                                                                                                                                                                                                                       352
                                                                                                                                                                                                                                                                                                                                                                                     331
                                                                                                                                                                                                                                                                                                                                                                                                           471
                                                                                                                                                                                                                                                                                                                                                                                                                                                      531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     667
                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78
                                                                                                                                                                                      CTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRASYMKKGSKVMPNIE
                                                                                                                                                                                                                                STEERHLLYGRPAVLY-RTRYDILYHTDFESGYSEIFLMLLWTSYTVSKQAEVSSVPDHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DYFVILTYCKDKDSSLNDCYSNIKTESFVVPNSDTYYNESCSRENITSVSYVRKIFSLHR
                                                                                                                                                                                                  --CPPEFERPPLILIAMNGFRYDYLNKWEKYIPTIK
                                                                                                                                                                                                                                                                             -IPHERRILTILRW
                                                                                                                                                                                                                                                                                                                                                                                                          GMEDVTCDRTEFLSNYLTNVDDITLVPGTLGRIRSKFSNNAK - YDPKAIIANLTCKKPDQ
                                                                                                                                                                                                                                                                                                                                                                                                                      HFKPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARKPLDVYKKPSGKCFFQGDHGFDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -GFHGSDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          --TMPEEVTRPNYPGIMYLQSDFDLGCTCD--DKVEPKNKLDELNKRLHTKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KRVWNYFQRVLVKKYASERNGVNVISGPIFDYDYDGLHDTEDKIKQ---YVEGSSIPVPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HYYSIITSCLDFTQPADKCDGPLSVSSFILPHRPD-NEESCNSSEDES-KWVEELMKMHT
                                                                                                                                                                                                                                                                                                                      LTLPDHERPSVYAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPV
                                                                                                                                                                                                                                                                                                                                                                APPKKRRKLHRMDHYAAETRQDKMTNPLREIDKIVGQLMDGLKQLKLRRCVNVIFVGDH
                                                                                                                                                                                                                                                                                                                                                                                     ----TDDERVGKALEKVDKAIALLMKGLKDLQLIGCANLILVSDH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          --ARATDFQSLLETNTVPMYRNF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -- NNKVYIPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYDAFLVTNMVPMYPAF
                                                                                                                                                                  132
                                                                                                                                             817
                                                                                                                                              Length
                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                databa
                                                                                                                                          Score 1151; DB 14;
Pred. No. 1.9e-85;
1; Mismatches 276;
                                                                                                              8404FD00641DA022
   EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     817
                                                                                                                                                                                                                                                                            NHRWWGGQPLWITATKQGVKAGTFFW----SVV--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          :| |:|| ::|| ::||:|:|
KTCYLQDMRVM-YYKEPCRYYSTQKDVTYGYLYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ARVRDIEHLTSLDFFRKTSRSYPEILTLKTYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |::||| :||| :|| :: |||| || || VRIKDIETVTSMSFYRNVYKTSSNVAYLKTYM
                                                                                                                                                                                                                                                                                                                                    141;
                                                                   -
                                                                                                              ¥.
                                                              Pfam; PF01663; Phosphodiest; ProDom; PD000946; -; 1. ProDom; PD004900; -; 1. SMART; SM00477; NUC; 1. SEQUENCE 817 AA; 94038 MW
Submitted (OCT-1999) to the EMBL; AF198100; AAF44374.1; InterPro; IPR001428; -. InterPro; IPR001604; -. InterPro; IPR003232; -. InterPro; IPR003232; -.
   the
                                                                                                                                          Query Match
Best Local Similarity 32.4%;
Matches 263; Conservative 1
                                                                                                                                                                                                           CISFOVT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FRP-
                                                                                                                                                                                       131
                                                                                                                                                                                                            104
                                                                                                                                                                                                                                191
                                                                                                                                                                                                                                                     145
                                                                                                                                                                                                                                                                                                                     293
                                                                                                                                                                                                                                                                                                                                         264
                                                                                                                                                                                                                                                                                                                                                                353
                                                                                                                                                                                                                                                                                                                                                                                                          413
                                                                                                                                                                                                                                                                                                                                                                                                                                                    472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     86
                                                                                                                                                                                                                                                                           251
                                                                                                                                                                                                                                                                                                204
                                                                                                                                                                                                                                                                                                                                                                                                                                332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          726
                                                                                                                                                                                                                                                                                                                                                                                    291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           391
 RL
DR
DR
DR
DR
DR
DR
DR
DR
                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                     Óγ
                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                <del>a</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          рp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
```

```
12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                K.F.X
                    O9SU82
O9SU82
O9SU82;
O9SU82;
O1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
O1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
O1-OCT-2000 (TrEMBLrel. 15, Last annotation update)
O1-OCT-2000 (TrEMBLrel. 15, Last annotation update)
NUCLEOTIDE PYROPHOSPHATASE-LIKE PROTEIN (EC 3.6.1.9).
T16L4.200 OR AT4G29690.
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                    3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DDDCEEIKAAECPAGFVRPPLIIFSVDGFRASYMKKGSKVMPNIEKLRSCGTHSPY-MRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --SVVIPHERRILTILRWLTLPDHERPSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YAFYSEQPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRKIH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RMDHYAAETRODKMTNPLREIDKIVGQLMDGLKQLKLRRCVNVIFVGDHGMEDVTCDRTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            --RVTEAVSKVDKMIGRIIMGLEKRKVFSDVHVILLGDHGMV-TNCDKKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -TLGR-IRSKFSNNAKYDPKAIIANLTCKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |: :: | : | : | : | : | ---YIDDLADWIKIPADWIQDYSPVLAMNPRWGKDVKNPGQKNAELVRKMNEALSSGKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DSPSSYVRRPOPPKKLNKPVVLLISCDGFRFGYOFKTE--TPNIDLLISRGTEAKTGLIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VNQGLMAATYFWPGADVHKGSWNCPKGFCKAPYNVSVPLEERVDTILNYFDLPEREIPDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PDQHF-KPYLKQHLPKRLHYANNRRIEDIHLLVERRWHVARKPLDVYKKPSGKCFFQGDH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -EC--SGTH
                                                                                                                                                                                                    耳
                                                                                                                                                                                                                                                                                                                 Mayer
                                                                                                                                                                                                    Mewes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                  1 · /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                           databases
                                                                                                                                                                                                                                                                            es
                                                                                                                                                                                                                                                                                                                   • 03
                                                                                                                                                                                                                                                                                                                ₩ <u>a</u>
                                                                                                                                                                                                                                                                                                                             Ø
                                                                                                                                                                                                                                                                                                                                                                              ŝ
                                                                                                                                                                                                                                                                            databas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lemcke
databas
                                                                                                                                                                                                                                                                                                                                                                                                                                                       3B95E6C0AE1B1215 CRC64
                                                                                                                                                                                                  Bancroft
                                                                                                                                                                                                                                                                                                                                                                              databa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , 646.5; bb
No. 1.5e-44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15
                                                                                                                                                                                            Bevan M., Rose M., Hempel S., Entian K.-D., Ba
Mayer K.F.X., Lemcke K., Schueller C.;
Submitted (JUN-1999) to the EMBL/GenBank/DDBJ
[2]
                                                                                                                                                                                                                                                                                                                                                             EU Arabidopsis sequencing project;
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ
EMBL; AL079344; CAB45329.1; -.
EMBL; AL161575; CAB79727.1; -.
InterPro; IPR002591; -.
Pfam; PF01663; Phosphodiest; 1.
Hydrolase.
SEQUENCE 457 AA; 51261 MW; 3B95E6C0AE1B121
                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
EU Arabidopsis sequencing project;
Submitted (JUN-1999) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                               EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   78;
                                                                                                                                                                                                                                                                                                                Entian K
                                                                                                                                                                                                                                                                                                                             to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12.9%;
32.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MALYFDEPDIQGHEYGPDDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FLSNYLTNVDDITLVPG-
                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
Rose M., Hempel S., E
Submitted (MAR-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TKQGVKAGTFFW--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151; Conser
                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                      N.A
                                                                                                                                                             NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                      FROM
                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         231
                                                                                                                                                                                                                                                                                                                                         4]
                                                                                                                                                                                                                                                                                         m
RESULT
Q9SU82
                                     RI
RP
RA
                                                                                                                                                                                                                                                                                                                                       RN
RP
                                                                                                                                                                                                                                                                                                                            RL
                                                                                                                                                                                                                                                                                                                                                                             RE DR S
                                                                                                                                                                                                                                                                                                                                                                 RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
```

GFDNKVNSMQTVFVGYGPTFKYKTKVPPFENIELYNVMCDLLGLKPAPNNGT 57

528

ŏ

Search completed: July 19, 2001, 14:46:48 Job time: 171 sec

```
4.5
Compugen Ltd.
 version
- 2000
 GenCore
(c) 1993
        Copyright
```

mode] XS. using search, protein OM protein

Seconds rch time 34.65 Secon (without alignments) 22.745 Million cell Search time \* \*\* :45:00 14 2001, 19 July o

Run

updates/sec

201 US-09-483-831-69\_COPY\_ 76

score Title: Perfect

YMRPVYPTKTFPN Sequence:

BLOSUM62 Gapop 10.0 table Scoring

60623988 seds, 412676

0

Gapext

residues Searched:

412676 satisfying chosen parameters hits of number Total

0 2000000000 length:
length: sed sed DB DB Minimum Maximum

-processing Post

90 ••

summaries 100% 45 st Match Match first Minimum Maximum Listing

Database

A\_Geneseq\_0601:\*

| SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1981.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1982.DAT:\* | SIDS8/gcgdata/geneseqp/AA1982.DAT:\* | SIDS8/gcgdata/geneseqp/AA1984.DAT:\* | SIDS8/gcgdata/geneseqp/AA1984.DAT:\* | SIDS8/gcgdata/geneseqp/AA1985.DAT:\* | SIDS8/gcgdata/geneseqp/AA1985.DAT:\* | SIDS8/gcgdata/geneseqp/geneseqp/AA1986.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1989.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1989.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1995.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1995.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1995.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseqgp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseqgp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseqgp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseqgp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseqgp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseq/geneseqgp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseq/geneseqgp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseq/geneseqgp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/geneseq/g 

y chance to have a be result being printed, distribution. predicted by score of the total score di s score total s number of results or equal to the analysis of the t number No. is the num greater than c s derived by an No. Ø score and is Pred

SUMMARIES		Description	AAY71992 Autotaxin phosphod	AAR86579 Autotaxin derived	8 Autotaxin	6 Rat autota	95 Rat autotaxin	6 Rat autotaxin	Y71997 Rat autotaxin vari	AAY71998 Rat autotaxin vari	AAY71999 Rat autotaxin vari	Human autotaxi	
		a	1		17 AA								
		h de	1										
		Length	13	8	829	S	S	S	S	S	S	S	()(
	ф	Query Match	100.0	100.0	100.0	100.0		100.0	100.0	100.0	100.0	100.0	
		Score	76	92	92	9/	92	92	92	97	9/	92	1
		Result No.	1	7	ന	4	S	9	7	œ	σ	10	1

	insulin insulin in recept t cancer dopsis t	idopsis thalidopsis thalidopsis thalidopsis thalidopsis thalidopsis thalidopsis thalidopsis associated sequen	colon breast acid s rymona rymona bacter bacter	Secreted protein e Human secreted pro Polypeptide identi Human secreted pro Arabidopsis thalia Arabidopsis thalia Sheep mitosis arre Human mitosis arre
AAR86596 AAY71987 AAR86580 AAR86595 AAY71989	2001 2001 2001 304	22947 2947 0708 4037 0157	000040000	AAW52839 AAY17529 AAY02378 AAB90545 AAG44375 AAB68971 AAB68972 AAW13020
17 17 17 17 22 22	777077	221 221 18 18 23	222001811	8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
117487	- C G G G G G	<b>2222</b>	いるててよららまっ	2111144410 21111144410 21111111111111111
0000000		440000		00000000000000000000000000000000000000
76 76 71 70 70	> 0 0 0 0 0 4 4 9 0 0 0 0 0 0	. 4 4 4 4 4 v v v w w w w w		44444444
				w w w 4 4 4 4 4 -

## ALIGNMENTS

Autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal; type I phosphodiesterase activity; ATP pyrophosphatase activity; ATPase; adenosine-5'-triphosphatase activity; phosphodiesterase catalytic site. site. catalytic Z 13 Autotaxin phosphodiesterase peptide; (first entry) standard; Unidentified 28-MAR-2001 AAY71992; AAY71992 RESULT AAY71992 XTX KW KW KW KW XX OS XX PN

WO200068386-A1

16-NOV-2000.

XX PD

2000WO-US12402 05-MAY-2000; 99US-0306979 07-MAY-1999;

INC (ZYMO ) ZYMOGENETICS

Ġ, Kelly

2001-007397/01 WPI;

```
and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein; AMF;
                               site. Phosphorylation of threonine residue at position 10 of this sequence is required for autotaxin to undergo autophosphorylation and exhibit phosphodiesterase and motility-stimulating activities. Autotaxin is a glycoprotein cytokine which increases adenosine receptors, resulting in inhibition of lipolysis, adenosine receptors, resulting in inhibition of lipolysis, of acreased hepatic gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adpocytes. Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase (ATPase) and ATP pyrophosphatase activities. By cells, particularly to reduce serum and its analogues are used to stimulate qlucore are used to stimulate qlucore are used to stimulate glucore are used to stimulate glucore.
                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                         adenosine-5'-
                                                                                                                                                                                                              cells, particularly to reduce serum glucose levels for satment of non-insulin dependent diabetes (NIDDM) in humans, generally any condition associated with elevated serum levels glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia) ansgenic animals that overexpress autotaxin are models for
For treating diabetes mellitus cells and inhibit lipolysis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nseq
                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ξ
                                                                                                                                                                                                                                                                                                                                                                   Length 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cancer diagnosis; therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             stimulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Stracke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  encoding
                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   derived from teratocarcinoma N-tera 2D1
                                                                                                                                                                                                                                                                                                                                                                 ore 76; DB 22;
red. No. 1.8e-06;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ы
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Schiffmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             autocrine motility
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 HUMAN SERVICES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  stimulating protein,
 for
      , td
                                                                                                                                                                                                                                                                                                                                                                   Score
Pred.
  eful e.g.
uptake k
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   788 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tumour; antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                therapy
                                                                                                                                                                                                                                                                                                                                                                                             ö
nsefnl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Murata
                                                                                                                                                                                                                                                                                                                                                                   100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94US-0346455
94US-0249182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95WO-US06613
             glucose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cytokine;
                                                                                                                                                                                                                                                                                                   metabolic diseases.
                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
 autotaxin proteins, ity, stimulate gluc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HEALTH
                                                                                                                                                                                                                                                                                                                                                                                                                       13
                                                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Autotaxin motility a in cancer diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1996-020533/02
N-PSDB; AAT06613.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Liotta
                                                                                                                                                                                                                                                                                                                                                                                                                                     1 ymrpvyptktfpn
                                                                                                                                                                                                                                                                                                                                                                                                                        YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
les 13; Conser
                                                                                                                                                                                                                                                                                                                           13 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Autotaxin; ATX;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9532221-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-NOV-1994;
25-MAY-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24-MAY-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-JUN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \mathbf{n}\mathbf{s}
                                                                                                                                                                                                                                                                                     Transgenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ٦,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAR86579;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           melanoma
                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR86579
                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Krutzch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \overline{\phantom{a}}
                                                                                                                                                                                                                                                                                                  human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HSSN)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ношо
                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                       \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         XX OS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΚW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    XX
PT
                                                                                                                                                                                                                                                                                                                                                                                                                         Q
```

```
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pasn
an autocrine motility stimulating protein which is present in cancer cells. ATX stimulates both random and directed migration of melanoma cells. The tumourous form of ATX is a secreted protein, while the transmembrane bound form is not present in tumour cells. The cDNA encoding this sequence can be used in a vector, to transform cells. The recombinant cells can then be used to produce the peptide sequences. Antibodies specific for these sequences can be produced, and can be used in cancer diagnosis and therapy. Different sites of localisation of the protein are utilised for diagnosis and prognosis of the stages of tumour protein are utilised for diagnosis and prognosis of the stages of tumour protein are utilised for diagnosis and prognosis of the stages of tumour progression. The sequences can be used in treatment methods to advantageously block the activity of the secreted form of AXT, while having little effect on the membrane form of AXT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cytokine; autocrine motility stimulating protein; AMF; umour; antibody; cancer diagnosis; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of
                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAR86559-R86596 represent autotaxin (ATX) and fragments of it. ATX an autocrine motility stimulating protein which is present in cancer cells. ATX stimulates both random and directed migration of melanoma cells. The tumourous form of ATX is a secreted protein, while the transmembrane bound form is not present in tumour cells. The cDNA encoding this sequence can be used in a vector, to transform cells. recombinant cells can then be used to produce the peptide sequences. Antibodies specific for these sequences can be produced, and can be in cancer diagnosis and therapy. Different sites of localisation of protein are utilised for diagnosis and prognosis of the stages of two progression. The sequences can be used in treatment methods to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nseq
                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                             Length 788;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         encoding it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Stracke M;
                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                             Score 76; DB 17;
Pred. No. 0.00012;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Autotaxin derived from melanoma cell line A2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ы́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Schiffmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            & HUMAN SERVICES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The sequences can be block the activity of
                                                                                                                                                                                                                                                                                                                                                                                                                                         829 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          stimulating; and therapy
                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Murata
                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         112pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94US-0346455
94US-0249182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 95WO-US06613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entry)
                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEPT HEALTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tumour;
                                                                                                                                                                                                                                                                                                                                                          138
                                                                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Liotta L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57-60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      motility s
diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1996-020533/02
                                                                                                                                                                                                                                                                                                                                             standard;
                                                                                                                                                                                                                                                                                                                             YMRPVYPTKTFPN
                                                                                                                                                                                                                788 AA;
                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATX;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    progression. 1
advantageously
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T06612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 4; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9532221-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-NOV-1994;
25-MAY-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-MAY-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-JUN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ں
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Autotaxin;
                                                                                                                                                                                                                                                                                             13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Autotaxin
in cancer
                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAR86578;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      melanoma
                                                                                                                                                                                                                                                                                                                                                                                                                                        AAR86578
                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ^
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Krutzch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (USSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI;
                                                                                                                                                                                                                                                                                                                                                            126
                                                                                                                                                                                                                                                                                                                               Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ношо
                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                          AAR86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   XX
PN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  XX
PD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PF
XX
PR
PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             XX
PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 XX
```

while

secreted form of AXT,

the

of

is

ATX

it.

of

and fragments

autotaxin (ATX)

represent

AAR86559-R86596

Page 62-65; 112pp; English.

4;

Claim

0:

10:41

4

2

Jul

Tue

rag

213

\_copy\_201

```
g
                                                                                                                                                                                                                           XX
                                                                                                                                                                                                                                                                                                                                         XX
PD
                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                    PN
                                                                                                                                                                                                                                                                                                                                                              PF
                                                                                                                                                                                                                                                                                                                                                       XX
                                               ö
                                                                                                                                                                                                                                                                   10"
                                                                                                                                                                                                                                                                                       in claim 10;
designated
                                                                                                                                                                                                                                                                                      10
                                                                                                                                                                                                                                                                                                                                    10
                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                                                                                                                                                                    claim
                                               Gaps
                                                                                                                                                                                                                                                                                                                                    claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                   s mellitus
ipolysis -
                                                                                                                                                                                                                                                                                                                site
                                                                                                                                                          Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal type I phosphodiesterase activity; ATP pyrophosphatase activity; ATPase; adenosine-5'-triphosphatase activity.
                                                                                                                                                                                                                                                                   in
                                                                                                                                                                                                                                                                                                                                    in
                                             ;
0
                                                                                                                                                                                                                                                                                       in
                                                                                                                                                                                                                                                                                                                catalytic
                                                                                                                                                                                                                                                                                      y claimed i
autotaxin
                                Length 829;
                                                                                                                                                                                                                                                                   claimed
                                                                                                                                                                                                                                                                                                                                    claimed
                                                                                                                                                                                                                                                                                                                                                                                                                                                   for treating diabetes cells and inhibit lip
                                              Indels
                                                                                                                                                                                                                                   domain
                                                                                                                                                                                                                                                                                     s specifically
in rat brain a
(AAY71989)"
                                                                                                                                                                                                                                                                                                                "Autotaxin phosphodiesterase
                                                                                                                                                                                                                                                                                                                                   specifically
                                                                                                                                                                                                                                                                   specifically
 AXT
                                  ·- m O
                                       0.0001;
nes
                                                                                                                                                                                                                                  "Putative transmembrane
of
                                 DB
                                                                                                                                                                                                                                               RGD_binding_domain
form
                                Score 76; D
Pred. No. 0.
; Mismatches
                                                                                                                                                                                                                                                                                      1s
                                                                                                                                                                                                                                                                   15
                                                                                                                                                                                                                                                                               Epitope
"This region is
egion is absent
                                                                                                                                                                                                                                                                                                                                    region is
                                                                                                                                                                                                                                                                                             his region is absent
s PD-Ialpha sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       English
                                                                                                                                                                                                                                                                                                                                                                                                                                                   eful e.g. f
uptake by
membrane
                                                                                                                                                                                                                                                                  region
                                                                                                                                                                                                                    Location/Qualifiers
5..15
                                                                                                        858 AA
                                                                                                                                                                                                                                               /laber
143..158
/label= Epitope
'.^+e= "This reg
                                                                                                                                                                                                                                                                                                                             Epitope
                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                  nseful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     126pp;
the
                                 100.08;
100.08;
                                                                                                        Protein;
                                                                                                                                                                                                                                                                                                                                                                          2000WO-US12402
                                                                                                                                                                                                                                                                                                                                                                                        99US-0306979
                                                                                                                                                                                                                                                                                                                                                                                                                                                          glucose
                                                                                                                                   entry)
                                                                                                                                                                                                                                                                        149..158
/label= E
                                                                                                                                                                                                                                                                                                                      595
                                                                                                                                                                                                                                                                                                        196..208
                                                                                                                                                                                                                                                                                                                       ວຮ5..595
/label=
 Ö
                                                                                                                                                                                                                                              /label-
                                                                                                                                                                                                                                                                                      /note=
This re
                                                                                                                                                                                                                                                                                                                                                                                                                                                   autotaxin proteins, ity, stimulate gluc
                                                                                                                                                                                                                                   /note=
122..13
                                                                                                                                                                                                                                                                                                                /note=
585..5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     101-104;
                                                                       127
                                                                                                                                                                                                                                                                                                                                    /note=
                                                                                                                                              protein
effect
                                                           Н
                                                                                                                                                                                                                                                                                                                                                                                                     ZYMOGENETICS
                                                                                                                                  (first
                                               Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                               2001-007397/01
                                                           YMRPVY PTKTFPN
                                                                 standard;
              A
                                       imilarity
                                                                                                                                                                                                                                                                                                                                                                                                                                     AAD02131
             φ
                                                                                                                                                                                                                                                                                                                                                WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Page
little
                                                                                                                                              autotaxin
             82
                                                                                                                                                                                                                                         site
                                                                                                                                                                                                                                                                                                                                                                          -2000;
                                                                                                                                                                                                                                                                                                                                                                                        -MAY-1999;
                                                                                                                                                                                                                                                                                                                                                             -2000
                                                                                                                                  -MAR-2001
                                                                                                                                                                                                                                                                                                          Active-site
                                       S1
13;
                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                   ;
GD
                                                                                                       AAY71986
             Sequence
                                 Match
                                                                                                                    AAY71986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                      Best Local
Matches
                                                                                                                                                                                                                                                                                                                                                                                                     \overline{\phantom{a}}
                                                                                                                                                                                                                                        Binding
                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB;
having
                                                                                                                                                                                                         Rattus
                                                                                                                                                                                                                            Domain
                                                                                                                                                                                                                                                                         Region
                                                                                                                                                                                                                                                                                                                       Region
                                                                                                                                                                                                                                                                                                                                                             16-NOV
                                                                                                                                                                                                                                                                                                                                                                          05-MAY
                                                                                                                                                                                                                                                      Region
                                                                                                                                                                                                                                                                                                                                                                                                                  Kelly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim
                                                                                                                                                                                                                                                                                                                                                                                                     (ZYMO
                                                           Н
                                                                       115
                                                                                                                                              Rat
                                                                                                 986
                                                                                                                                                                                                                     Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                          obe
                                                                                                                                 28
                                 Query
                                                                                           RESULT
SS
                                                                                                        П
                                                                                                                   ΩD
                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                 FT
FT
FT
                                                                                                                                                                                                                                                           FT
FT
FT
FT
                                                                                                                                                                                                                                                                                     FF
                                                                                                                                                                                                                                                                                                        FT
FT
FT
                                                                                                                                                                                                                                                                                                                                                                                                                        XX
```

Q

13

Autotaxin

protein.

autotaxin

rat

įs

sednence

present

The

```
glycoprotein cytokine which increases insular signalling in adipose tissue by producing substrate for adenosine receptors, resulting in inhibition of lipolysis, decreased hepatic gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes.

C Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase at analogues are used to stimulate glucose uptake by cells, particularly to to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid with elevated serum metabolic animals that overexpress autotaxin are models for human metabolic diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  variant
                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    e.g. for treating diabetes mellitus ke by cells and inhibit lipolysis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hepatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal, type I phosphodiesterase activity; ATP pyrophosphatase activity; ATPase; adenosine-5'-triphosphatase activity; mutant; mutein; vari
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence is variant (A93V) of rat autotaxin protein. Autotaxin is a glycoprotein cytokine which increases insulin signalling in adipose tissue by producing substrate for adenosine receptors, resulting in inhibition of lipolysis, decreased hepatic
                                                                                                                                                                                                                                                                                                                                                                 ;
0
                                                                                                                                                                                                                                                                                                                              858;
                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                substituted by
                                                                                                                                                                                                                                                                                                                           Score 76; DB 22;
Pred. No. 0.00014
Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   type Ala
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      858 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -; 126pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         uptake
                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (A93V).
                                                                                                                                                                                                                                                                                                                           100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Wild
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000WO-US12402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62690E0-SD66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          glucose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INC.
                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      axin proteins, stimulate gluc
                                                                                                                                                                                                                                                                                                                                                                                                                                           208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   autotaxin variant
                                                                                                                                                                                                                                                                                                                                                                                                     13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (2YMO) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001-007397/01
                                                                                                                                                                                                                                                                                                                                                                                                                          YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       standard;
                                                                                                                                                                                                                                                                          ¥.
                                                                                                                                                                                                                                                                                                                                                Similarity 13; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Key .
Misc-difference
                                                                                                                                                                                                                                                                        828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rattus sp.
Synthetic.
                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY71995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY71995
                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            obesity,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kelly
                                                                                                                                                                                                                                                                                                                                                                                                                                           196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI;
                                                                                                                                                                                                                                                                                                                                                                                                         -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY71995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
```

```
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
                                (ATPase) and ATP pyrophosphatase activities. Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia). Transgenic animals that overexpress autotaxin are models for human metabolic diseases.

Note: The present sequence is not shown in the specification but is derived from rat autotaxin protein sequence found in page 101-104 of sequence listing (AAY71986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 variant
                                                                                                                                                                                                                                                              Gaps
              ation of adipocytes.
adenosine-5'-triphosphatase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for treating diabetes mellitus cells and inhibit lipolysis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              decreased hepatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal; type I phosphodiesterase activity; ATP pyrophosphatase activity; ATP pyrophosphatase activity; ATP are; mutant; mutein; vari
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence is variant (A194V) of rat autotaxin protein. is a glycoprotein cytokine which increases insulin in adipose tissue by producing substrate for adenosine resulting in inhibition of lipolysis, decreased hepatic
  insulin
                                                                                                                                                                                                                                                            ő
                                                                                                                                                                                                                                  Length 858;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ala substituted by Val"
                                                                                                                                                                                                                                                              Indels
gluconeogenesis and serum glucose levels, and increased sensitivity. It also inhibits differentiation of adipocy Autotaxin has type I phosphodiesterase, adenosine-5'-tri(ATPase) and ATP pyrophosphatase activities. Autotaxin
                                                                                                                                                                                                                                  ore 7,6; DB 22;
red. No. 0.00014;
Mismatches 0;
                                                                                                                                                                                                                                   Score 76;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                рλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ġ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uptake
                                                                                                                                                                                                                                                                                                                                                                                      828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  useful
                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (A194V)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Wild
                                                                                                                                                                                                                                  100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                      Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000WO-US12402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                stimulate glucose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           126pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-030697
                                                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ) ZYMOGENETICS INC
                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      autotaxin variant
                                                                                                                                                                                                                                                                                          13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . .
1
                                                                                                                                                                                                                                                                                                                                                                                                                                          (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001-007397/01
                                                                                                                                                                                                                                                                                                                                                                                      standard;
                                                                                                                                                                                                                                                                                                        YMRPVYPTKTFPN
                                                                                                                                                                                                                                                  Similarity
13; Conser
                                                                                                                                                                                            858 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Autotaxin is signalling in receptors, res
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                           28-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rattus sp.
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                  AAY71996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  obesity,
                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                      AAY71996
                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -MAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (ZYMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kelly
                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI;
                                                                                                                                                                                                                                                                                          -
                                                                                                                                                                                                                                                                                                                    196
                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Key
                                                                                                                                                                                                                                                                                                                                                                       96
                                                                                                                                                                                                                                                                                                                                                           RESULT
AAY7199
                                                                                                                                                                                                                                                  Best
                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                          Q
```

```
gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes.

Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase

C ATPase) and ATP pyrophosphatase activities. Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia). Transgenic animals that overexpress autotaxin are models for human metabolic diseases.

C Note: The present sequence is not shown in the specification but is derived from rat autotaxin protein sequence found in page 101-104 of sequence listing (AAY71986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     variant.
                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         decreased hepatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mellitus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence is variant (S236T) of rat autotaxin protein. a glycoprotein cytokine which increases insulin in adipose tissue by producing substrate for adenosine resulting in inhibition of lipolysis, decreased hepatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal, type I phosphodiesterase activity; ATP pyrophosphatase activity; ATP pyrophosphatase activity; ATP pyrophosphatase activity; wutein; war:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or treating diabetes melliticells and inhibit lipolysis
                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                    Length 858;
                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       substituted by
                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                    Score 76; DB 22;
Pred. No. 0.00014
Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             uptake by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   126pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           e.9
                                                                                                                                                                                                                                                                                                                                                                                                                  AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Wild type
                                                                                                                                                                                                                                                                                                                                                                                                                828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          useful
                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (S236T).
                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000WO-US12402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0306979
                                                                                                                                                                                                                                                                                                                                                                                                                  standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      glucose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INC
                                                                                                                                                                                                                                                                      Similarity 100
13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          autotaxin proteins,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note=
                                                                                                                                                                                                                                                                                                                                            208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      variant
                                                                                                                                                                                                                                                                                                                13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001-007397/01
                                                                                                                                                                                                                                                                                                                YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                               AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Autotaxin is a signalling in a
                                                                                                                                                                                                               828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            receptors,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rattus sp. Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JD;
                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY71997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         obesity,
                                                                                                                                                                                                                                                                                                                                                                                                                  AAY71997
                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ~
                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (ZYMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kelly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI;
                                                                                                                                                                                                                                                                      Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                             196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rat
                                                                                                                                                                                                                                                                                                                                                                                                 AAY71997
                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PA
XX
XX
DR
YX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OS
OS
XX
FH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FT
FT
XX
PN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    XX GXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PF
XX
PR
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PT
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PS
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        XX XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KW
KW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΚW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ΚW
                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                     П
           $$$$$$$$$$$$$$$%
                                                                                                                                                                                                                                                                                                                  Q
```

0;

10:41:07

24

Jul

Tue

ag

H

```
and
gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes.
Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase (ATPase) and ATP pyrophosphatase activities. Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia). Transgenic animals that overexpress autotaxin are models for human metabolic diseases.

Note: The present sequence is not shown in the specification but is derived from rat autotaxin protein sequence found in page 101-104 of sequence listing (AAY71986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            variant
                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for treating diabetes mellitus cells and inhibit lipolysis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal; type I phosphodiesterase activity; ATP pyrophosphatase activity; ATPase; adenosine-5'-triphosphatase activity; mutant; mutein; vari
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      decreased hepatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       t sequence is variant (R265K) of rat autotaxin protein. is a glycoprotein cytokine which increases insulin in adipose tissue by producing substrate for adenosine resulting in inhibition of lipolysis, decreased hepatic
                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                      Length 858;
                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Wild type Arg substituted by Lys
                                                                                                                                                                                                                                                     core 76; DB 22;
red. No. 0.00014
Mismatches 0
                                                                                                                                                                                                                                                      Score 76;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                glucose uptake by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  autotaxin proteins, useful e.g. ity, stimulate glucose uptake b
                                                                                                                                                                                                                                                                                                                                                                                                                   858 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           English
                                                                                                                                                                                                                                                                                 ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rat autotaxin variant (R265K).
                                                                                                                                                                                                                                                     100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0306979.
                                                                                                                                                                                                                                                                                                                                                                                                                  Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000WO-US12402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          126pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                          208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Autotaxin is a glycopr
signalling in adipose
                                                                                                                                                                                                                                                                                                               13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001-007397/01
                                                                                                                                                                                                                                                                                                                YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                         ymrpvyptktfpn
                                                                                                                                                                                                                                                                                                                                                                                                                standard;
                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               07-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          present
                                                                                                                                                                                                                                                                                  13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus sp. Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     receptors,
                                                                                                                                                                                                                                                                                                                                                                                                                                             AAY71998;
                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                AAY71998
                                                                                                                                                                                                                                                       Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                obesity,
                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ZYMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kelly
                                                                                                                                                                                                                                                     Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                         196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New
                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                   AAY719
    d
                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
```

```
and
gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes. Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase (ATPase) and ATP pyrophosphatase activities. Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia). Transgenic animals that overexpress autotaxin are models for human metabolic diseases.

Note: The present sequence is not shown in the specification but is derived from rat autotaxin protein sequence found in page 101-104 of sequence listing (AAY71986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      variant
                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            diabetes mellitus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   decreased hepatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal type I phosphodiesterase activity; ATP pyrophosphatase activity; ATPase; adenosine-5'-triphosphatase activity; mutant; mutein; var
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    t sequence is variant (S289T) of rat autotaxin protein. is a glycoprotein cytokine which increases insulin in adipose tissue by producing substrate for adenosine resulting in inhibition of lipolysis, decreased hepatical

    for treating diabetes mellity
by cells and inhibit lipolysis

                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                 858;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Thr"
                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            substituted by
                                                                                                                                                                                                                                                               Score 76; DB 22;
Pred. No. 0.00014
Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
289
                                                                                                                                                                                                                                                                                                                                                                                                                                     858 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -; 126pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           autotaxin proteins, useful e.gity, stimulate glucose uptake
                                                                                                                                                                                                                                                                                             ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (S289T).
                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Wild
                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-0306979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000WO-US12402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note=
                                                                                                                                                                                                                                                                                                                                                           208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               autotaxin variant
                                                                                                                                                                                                                                                                                                                            13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001-007397/01
                                                                                                                                                                                                                                                                             l Similarity
13; Conserv
                                                                                                                                                                                                                                                                                                                                           standard;
                                                                                                                                                                                                                                                                                                                             YMRPVYPTKTFPN
                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                                                                     828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      is a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Autotaxin 1. signalling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rattus sp. Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   receptors,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY71999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ц
Э
                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY71999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           obesity,
                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                 Ouery Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (ZYMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kelly
                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI;
                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
AAY71999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PS
XX
```

<u>;</u>

```
Kelly
                                                                                                                                                                                                                                                                                                                                                                Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo
                                                                                                                                                                                                                                     Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI;
                                                                                                                                                                                                                                                      197
                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New
                                                                                                                                                                                                                                                                                    RESULT 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       XX
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                             Ιď
                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                        (ATPase) and ATP pyrophosphatase activities. Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia). Transgenic animals that overexpress autotaxin are models for human metabolic diseases.

Note: The present sequence is not shown in the specification but is derived from rat autotaxin protein sequence found in page 101-104 of sequence listing (AAY71986).
                                                                                                                                                                                      Gaps
is and serum glucose levels, and increased insulin it also inhibits differentiation of adipocytes. type I phosphodiesterase, adenosine-5'-triphosphatase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             caxin proteins, useful e.g. for treating diabetes mellitus stimulate glucose uptake by cells and inhibit lipolysis -
                                                                                                                                                                                                                                                                                                                                                      Human; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal; type I phosphodiesterase activity; ATP pyrophosphatase activity; ATPase; adenosine-5'-triphosphatase activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            site"
                                                                                                                                                                                     ö
                                                                                                                                                                   Length 858;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              active
                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Putative transmembrane domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  197..209
/note= "Putative phosphodiesterase
                                                                                                                                                                             4;
                                                                                                                                                                   DB 22;
0.00014;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /label= RGD_binding_domain
                                                                                                                                                                                      Mismatches
                                                                                                                                                                  Score 76;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27; Page 119-121; 126pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
8..26
                                                                                                                                                                                                                                                                            859 AA
                                                                                                                                                                                      ;
0
                                                                                                                                                                   100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000WO-US12402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0306979
                                                                                                                                                                                                                                                                             Protein;
                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .125
                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                      autotaxin protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        44..45
                                                                                                                                                                                                                            208
                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ZYMO ) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001-007397/01
B; AAD02133.
 gluconeogenesis and
sensitivity. It also
Autotaxin has type ]
                                                                                                                                                                                                          YMRPVYPTKTFPN
                                                                                                                                                                                                                    standard;
                                                                                                                                                                              Similarity
13; Conser
                                                                                                                                        858 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -site
                                                                                                                                                                                                                                                                                                                                                                                                                          sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Active-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16 - NOV - 2000
                                                                                                                                                                                                                                                                                                                 28-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          obesity,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cleavage
                                                                                                                                                                                                                                                                            AAY71991
                                                                                                                                        Sequence
                                                                                                                                                                     Match
                                                                                                                                                                                                                                                                                               AAY71991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SDB;
                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kelly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim
                                                                                                                                                                                                                                                                                                                                      Human
                                                                                                                                                                                                                                                           10
                                                                                                                                                                                                                                                                                                                                                                                                                          Ношо
                                                                                                                                                                                                                             196
                                                                                                                                                                                                          Н
                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI
                                                                                                                                                                                                                                                                                                                                                                                                                                            Key
                                                                                                                                                                     Query
Best I
                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                          XX PX AY
                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                        XXXX
                                                                                                                                                                                                                                                                                                                                     DE
                                                                                                                                                                                                                                                                                                                                              XX
KW
KW
                                                                                                                                                                                                                                                                              ID
                                                                                                                                                                                                           Ω
```

```
Autotaxin is a glycoprotein cytokine which increases insulin signalling in adipose tissue by producing substrate for adenosine receptors, resulting in inhibition of lipolysis, decreased hepatic gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes. Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase (ATPase) and ATP pyrophosphatase activities. Autotaxin and its analogues are used to stimulate glucose uptake Autotaxin and its analogues serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia). Transgenic animals that overexpress autotaxin are models for human metabolic diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
213
e= "Autotaxin phosphodiesterase catalytic site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             autotaxin proteins, useful e.g. for treating diabetes mellitus ity, stimulate glucose uptake by cells and inhibit lipolysis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity, adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal, type I phosphodiesterase activity; ATP pyrophosphatase activity; ATP pyrophosphatase activity; ATP pyrophosphatase activity; ATP pyrophosphatase activity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 859;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 76; DB 22;
Pred. No. 0.00014;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RGD_binding_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 27; Page 108-110; 126pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
127..129
/label= RGD_binding_0
201..213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 863 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     teratocarcinoma autotaxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
ilarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY71988 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000WO-US12402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0306979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (2YMO) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001-007397/01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
ses 13; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                     859 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Active-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY71988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              obesity,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAR86559-R86596 represent autotaxin (ATX) and fragments of it. This sequence represents the full length protein sequence of the A2058 melanoma cell line ATX protein. ATX is an autocrine motility stimulating protein which is present in cancer cells. ATX stimulates both random and directed migration of melanoma cells. The tumourous for of ATX is a secreted protein, while the transmembrane bound form is not present in tumour cells. The cDNA encoding this sequence can be used in a vector, to transform cells. The recombinant cells can then be used to produce the peptide sequences. Antibodies specific for these sequences can be used in cancer diagnosis and therapy.
          teratocarcinoma cells. Autotaxin is a glycoprotein cytokine which increases insulin signalling in adipose tissue by producing substrate for adenosine receptors, resulting in inhibition of lipolysis, decreased hepatic gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes. Autotaxin has type I phosphodiesterase, adenosine-5'-criphosphatase (ATPase) and ATP pyrophosphatase activities.

Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia).

Transgenic animals that overexpress autotaxin are models for human metabolic diagrams.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cytokine; autocrine motility stimulating protein; AMF; tumour; antibody; cancer diagnosis; therapy.
                                 substrate
                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nseq
                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                               Length 863;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      i.t
                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein, and DNA encoding
   autotaxin isolated from human
                                                                                                                                                                                                                                                                                            Score 76; DB 22;
Pred. No. 0.00014;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Schiffmann E,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (USSH ) US DEPT HEALTH & HUMAN SERVICES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91-94; 112pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard; Protein; 915 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ٦,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   stimulating
                                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Murata
                                                                                                                                                                                                                                                                                             100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95WO-US06613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94US-0346455
94US-0249182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                   metabolic diseases.
                                                                                                                                                                                                                                                                                                                            Conservative
   sedneuce is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         autotaxin protein
                                                                                                                                                                                                                                                                                                                                                                                      213
                                                                                                                                                                                                                                                                                                                                                           13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Liotta L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                motility s
diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1996-020533/02
                                                                                                                                                                                                                                                                                                                                                          1 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                            Similarity 13; Conser
                                                                                                                                                                                                                                                                                                                                                                         863 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       n; ATX;
cell; t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9532221-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-NOV-1994;
25-MAY-1994;
   The present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-JUL-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ٦,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Autotaxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR86596;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAR86596
                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        melanoma
                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Krutzch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A2058
                                                                                                                                                                                                                    human
                                                                                                                                                                                                                                                                                                             Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                      201
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAR86596
                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
g
                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              XXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DE
```

```
ö
       diagnosis
Different sites of localisation of the protein are utilised for diagnosis and prognosis of the stages of tumour progression. The sequences can be used in treatment methods to advantageously block the activity of the secreted form of AXT, while having little effect on the membrane form of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and
                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              adenosine-5'-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Autotaxin phosphodiesterase catalytic site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sins, useful e.g. for treating diabetes mellitus glucose uptake by cells and inhibit lipolysis -
                                                                                                                                                                                                                                                                                                                                                                                               Human; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal; type I phosphodiesterase activity; ATP pyrophosphatase activity; ATPase; adenosine-5'-triphosphatase activity; melanoma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence is autotaxin isolated from human melanoma cells. Autotaxin is a glycoprotein cytokine which increases insulin signalling in adipose tissue by producing substrate for adenosine receptors, resulting in inhibition of lipolysis, decreased hepatic gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes. Autotaxin has type I phosphodiesterase, adenosine triphosphatase (ATPase) and ATP pyrophosphatase activities. Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans,
                                                                                                                                                           ö
                                                                                                                                 915;
                                                                                                                                                            Indels
                                                                                                                                 Length
                                                                                                                  DB 17;
0.00015;
0;
                                                                                                                               Score 76; DB
Pred. No. 0.0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
127..129
/label= RGD_binding_domain
201..213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Page 105-108; 126pp; English
                                                                                                                                                                                                                                                                                        AA
                                                                                                                                                                                                                                                                                      915
                                                                                                                                                           0
                                                                                                                                100.0%;
larity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                       Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0306979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000WO-US12402
                                                                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                                                                                                                                                                                                                                       autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          autotaxin proteins,
ity, stimulate glucc
                                                                                                                                                                                                                  213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note=
                                                                                                                                                                                       13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                          (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001-007397/01
                                                                                                                                                                                                                                                                                       standard;
                                                                                                                                                                                       YMRPVYPTKTFPN
                                                                                                                                                                                                     Similarity 13; Conser
                                                                                         AA;
                                                                                        915
                                                                                                                                                                                                                                                                                                                                                                       melanoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200068386
                                                                                                                                                                                                                                                                                                                                           28-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Active-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27;
                                                                                                                                 Query Match
Best Local S
Matches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SD;
                                                                                                                                                                                                                                                                                     AAY71987
                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       obesity,
                                                                                                                                                                                                                                                                                                                 AAY71987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kelly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim
                                                                                                                                                                                                                                                                                                                                                                         Нишап
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (ZYMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI;
                                                                                                                                                                                         -1
                                                                                                                                                                                                                  201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nev
                                                             AXT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Key
                                                                                                                                                                                                                                                                        AAY71987
      22222X8
                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                    XX
                                                                                                                                                                                                                                                                                                                                                                                                               FTFTX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΚW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ă
```

Tue

```
ô
                                                                                                                                                                                                           cytokine; autocrine motility stimulating protein; AMF tumour; antibody; cancer diagnosis; therapy.
                                                                             Gaps
or generally any condition associated with elevated serum levels
of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia)
Transgenic animals that overexpress autotaxin are models for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nseq
                                                                            ô
                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Σ
                                                              91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Stracke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    encoding
                                                                             Indels
                                                              Length
                                                            ore 76; DB 22;
ed. No. 0.00015;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    motility stimulating protein, and DNA diagnosis and therapy
                                                                                                                                                                                                                                                                                                                                                                         acid"
                                                                                                                                                                                                                                                                acid"
                                                                                                                                                                                                                                                                                                                            acid"
                                                                                                                                                                                                                                                                                                                                                                                        acid"
                                                                                                                                                                                                                                                                                                                                                                                                       acid"
                                                                                                                                                                                                                                                                                                                                                                                                                     acid"
                                                                                                                                                                                                                                                                                                              acid"
                                                                                                                                                                                                                                                                                                                                            acid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Schiffmann
                                                                                                                                                                                                                                                                 amino
                                                                                                                                                                                                                                                                                                                                                                          amino
                                                                                                                                                                                                                                                                                                                                            amino
                                                                                                                                                                                                                                                                                                                                                                                                       amino
                                                                                                                                                                                                                                                                                amino
                                                                                                                                                                                                                                                                                               amino
                                                                                                                                                                                                                                                                                                              amino
                                                                                                                                                                                                                                                                                                                             amino
                                                                                                                                                                                                                                                                                                                                                           amino
                                                                                                                                                                                                                                                                                                                                                                                         amino
                                                                                                                                                                                                                                                                                                                                                                                                                      amino
                                                                                                                                                                                             Autotaxin derived from human liver cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        & HUMAN SERVICES
                                                             Score
Pred.
                                                                                                                                                                                                                                                               "unspecified
                                                                                                                                                                                                                                                                               "unspecified
                                                                                                                                                                                                                                                                                              "unspecified
                                                                                                                                                                                                                                                                                                              "unspecified
                                                                                                                                                                                                                                                                                                                            "unspecified
                                                                                                                                                                                                                                                                                                                                           "unspecified
                                                                                                                                                                                                                                                                                                                                                                         "unspecified
                                                                                                                                                                                                                                                                                                                                                                                                       "unspecified
                                                                                                                                                                                                                                                                                                                                                                                                                     "unspecified
                                                                                                                                                                                                                                                                                                                                                                                       "unspecified
                                                                                                                                                                                                                                             Location/Qualifiers
864
                                                                                                                                                                                                                                                                                                                                                          "unspecified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ب
                                                                                                                                                979
                                                                            ;;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Murata
                                                             100.0%;
100.0%;
                                                                                                                                                standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94US-0346455
94US-0249182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95WO-US06613
                                                                                                                                                                              entry)
                        metabolic diseases.
                                                                             Conservative
                                                                                                                                                                                                                                                             /note=
889
                                                                                                                                                                                                                                                                                                            /note=
927
                                                                                                                                                                                                                                                                                                                                                                        /note=
954
                                                                                                                                                                                                                                                                                                                                                                                     /note=
967
                                                                                                                                                                                                                                                                              'note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (USSH ) US DEPT HEALTH
                                                                                                                                                                                                                                                                                             /note=
                                                                                                                                                                                                                                                                                                                                                                                                       /note=
975
                                                                                                                                                                                                                                                                                                                             note=
                                                                                                                                                                                                                                                                                                                                           note=
                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                                                                                          'note=
                                                                                           13
                                                                                                          21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ľ,
                                                                                                                                                                              (first
                                                                                                                                                                                                                                                                                      905
                                                                                                                                                                                                                                                                                                                                                  944
                                                                                                                                                                                                                                                                                                                                                                 950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1996-020533/02
                                                                                                                                                                                                                                                                                                                                   937
                                                                   l Similarity
13; Conserv
                                                                                          Liotta
                                        AA;
                                                                                                                                                                                                                                                        Misc-difference
                                                                                                                                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                           Autotaxin; ATX; melanoma cell;
                                                                                                                                                                                                                                                                       Misc-difference
                                                                                                                                                                                                                                                                                      Misc-difference
                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
                                        915
                                                                                                                                                                                                                                   sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                    WO9532221-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8-NOV-1994;
5-MAY-1994;
                                                                                                                                                                              28-JUN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cancer
                                                             Query Match
Best Local S
Matches 13
                                                                                                                                                               AAR86580;
                                                                                                                                               AAR86580
                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Krutzch
                        human
                                                                                                                                 14
                                                                                                                                                                                                                                  Ношо
                                                                                                                                         80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in
                                                                                                                                 RESULT
                                                                                                                                       AAR86
 d
                                                                                                                                                              FT
                                                                                                                                                                                                                                                                                                                                   ò
```

5

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR86559-R86596 represent autotaxin (ATX) and fragments of it. This sequence represents the full length protein sequence of the teratocarcinoma N-tera 2D1 ATX protein. ATX is an autocrine motility stimulating protein which is present in cancer cells. ATX stimulates both random and directed migration of melanoma cells. The tumourous form of ATX is a secreted protein, while the transmembrane bound form is not present in tumour cells. The cDNA encoding this sequence can be used in a vector, to transform cells. The recombinant cells can then be used to produce the peptide sequences. Antibodies specific for these
                                      AARB6559-R86596 represent autotaxin (ATX) and fragments of it. ATX is an autocrine motility stimulating protein which is present in cancer cells. ATX stimulates both random and directed migration of melanoma cells. The tumourous form of ATX is a secreted protein, while the transmembrane bound form is not present in tumour cells. The cDNA encoding this sequence can be used in a vector, to transform cells. The recombinant cells can then be used to produce the peptide sequences. Antibodies specific for these sequences can be produced, and can be used in cancer diagnosis and therapy. Different sites of localisation of the protein are utilised for diagnosis and prognosis of the stages of tumour progression. The sequences can be used in treatment methods to advantageously block the activity of the secreted form of AXT, while having little effect on the membrane form of AXT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AME
                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cytokine; autocrine motility stimulating protein; tumour; antibody; cancer diagnosis; therapy.
                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                          Length 979;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Stracke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                encoding
                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                              ô
                                                                                                                                                                                                                                                                                                          core 76; DB 17;
red. No. 0.00016;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ы
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Schiffmann
                                                                                                                                                                                                                                                                                                              Score 76;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                stimulating protein, and therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      & HUMAN SERVICES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Clạim 4; Page 86-89; 112pp; English.
             English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٦,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       849
                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Murata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-tera 2D1 autotaxin protein.
                                                                                                                                                                                                                                                                                                             100.0%;
100.0%;
            112pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94US-0346455
94US-0249182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           95WO-US06613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entry)
                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HEALTH
                                                                                                                                                                                                                                                                                                                                                                                                         213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Liotta L,
           67-70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Autotaxin motility a in cancer diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1996-020533/02
                                                                                                                                                                                                                                                                                                                          1 Similarity
13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                       201 ymrpvyptktfpn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       standard;
                                                                                                                                                                                                                                                                                                                                                                             YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                 979 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US DEPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATX;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cell;
             Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9532221-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-NOV-1994;
25-MAY-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24-MAY-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JUL-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <mark>ب</mark>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Autotaxin;
             4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR86595;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAR86595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 melanoma
                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Krutzch
                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (USSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                        15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI;
                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR86595
                                                                                                                                                                                                                                                                                                                              Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OS
XX
PN
XX
<del>a</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΚW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       XX
PR
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PA
XX
PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 XX
DX
PT
PT
SX
PT
SX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PF
                                                                                                                                                                                                                                                                                                                                                                             δ
```

```
sequences can be produced, and can be used in cancer diagnosis and therapy. Different sites of localisation of the protein are utilised for diagnosis and prognosis of the stages of tumour progression. The sequences can be used in treatment methods to advantageously block the activity of the secreted form of AXT, while having little effect on the membrane form of AXT.
\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}{\circ}\overset{\circ}
```

849 AA; Sequence

Gaps ; 0 Length 849; Indels Score 71; DB 17; 1 Pred. No. 0.00091; 1; Mismatches 0; Query Match
Best Local Similarity 92.3%;
Matches 12; Conservative

1 YMRPVYPTKTFPN 13 :|||||||||||||||| 201 hmrpvyptktfpn 213 δ

q

2001, 14:45:00 Search completed: July 19, Job time: 208 sec

```
4.5
Compugen Ltd.
version
- 2000
GenCore
(c) 1993
      (c)
      Copyright
```

model 30 using search, protein OM protein

•• :16:07 13 2001, 23, July on:

Run

Search time 20.3 Seconds (without alignments) 12.901 Million cell up

updates/sec

US-09-483-831-69\_COPY\_201 76

**YMRPVYPTKTFPN** 

Sequence:

9 score: Perfect Title:

table Scoring

Gapext BLOSUM62 Gapop 10.0

0.5

residues 20144635 seds, 193259 Searched

193259 hits satisfying chosen parameter of Total number

ഗ

2000000000 length:
length: sed sed DB DB Minimum Maximum

•• processing

1 0% 1 100% . 45 summaries Minimum Match (
Maximum Match 1
Listing first 4

Database

Issued\_Patents

/cgn2\_6/ptodata/2/iaa/5A\_COMB.pep:\*/cgn2\_6/ptodata/2/iaa/5B\_COMB.pep:\*/cgn2\_6/ptodata/2/iaa/6A\_COMB.pep:\*/cgn2\_6/ptodata/2/iaa/6B\_COMB.pep:\*/cgn2\_6/ptodata/2/iaa/PCTUS\_COMB.pep/cgn2\_6/ptodata/2/iaa/PCTUS\_COMB.pep/cgn2\_6/ptodata/2/iaa/backfiles1.pep 17 m 4 f 9 6 .......

No. is the number of results predicted by chance to have a preater than or equal to the score of the result being printed, derived by analysis of the total score distribution. the greater Pred. No. score gand is

### SUMMARTES

		ď			SUMMARIES	
Result No.	Score	Query	Length	DB	DI	Description
	92	0	ထ	7	46-455B-	App,
7	92	00	$^{\circ}$	က	-08-977-221-36	equence 36, App
m	92	00	8	ம	CT-US95-06613	equence 36, Ap
4	97	90.	(	-	-08-346-455B-3	34, App
Ŋ	9/	0	~	ო		34, Ap
9	97	00	3	ഹ	T-US95-06613-	34, Ap
7	97	00.		Н	46-455B-	69, App
ω	9/	00.	-	m	US-08-977-221-69	equence 69, Ap
on.	92	00	$\vdash$	Ŋ	CT-US95-06613-6	69, App
	92	00	~		46-455B-3	38, App
	76	00.	~	m	-08-977-221-3	38, Ap
	97	90	~	ഗ	T-US95-06613-3	38, App
	7.1	ب	9	Ч	US-08-346-455B-67	67, Ap
	7.1	ش	9	ო	-08-977-221-6	67, App
	7.1		9	ស	CT-US95-06613-	67, App
	69	0	~	ო	-09-187-331-	6, Appl
	69	0	2	7	S-08-392-	1, Appl
	69	0	2	7	S-08-504-16	1, Appl
	69	o.	$\mathbf{C}$	ഗ	T-US94-148	1, Appl
	40	2	0	7	S-08-684-024-	8, Appl
	40	ς.	0	ო	-09-145-868-	8, Appl
	40		0	7	9-80-	1, Appl
	40	ς.	0	7	-08-684-024-	6, Appl
	40		0	7	-08-684-024-	7, Appl
	40		0	ო	-09-145-868-	1, Ap
56	40	52.6		m	-09-145-8	6, Appl
	40	ė.	0	က	US-09-145-868-7	Sequence 7, Appli

Apploy Ap	Sequence 2, Appli
US-09-187-331-2 US-07-865-166A-6 US-08-207-481-20 PCT-US95-02689-20 US-08-484-905-120 US-08-481-985B-120 US-08-370-476-120 US-08-080-255-8 US-08-65-713-8 PCT-US93-05857-8 US-08-969-644-20 US-08-969-644-20 US-08-969-644-20 US-08-969-644-20 US-08-560-398-10 US-08-560-398-10 US-08-560-398-10	US-08-325-553-2
<b>6000000000000000000000000000000000000</b>	-
4 2222222 8 4 2222222 8 4 26 26 26 26 26 26 26 26 26 26 26 26 26	750
0.0844444444444444444444444444444444444	7
8 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3	36
22 E E E E E E E E E E E E E E E E E E	45

### **ALIGNMENTS**

```
APPLICANT: UNITED STATES OF AMERICA; DEPT.
APPLICANT: OF HEALTH AND HUMAN SERVICES
TITLE OF INVENTION: MOTILITY STIMULATING
TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS AND
TITLE OF INVENTION: THERAPY
NUMBER OF SEQUENCES: 69
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 2026-4149PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 36:
SEQUENCE CHARACTERISTICS:
LENGTH: 788
                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PC compatible
SOFTWARE: WordPerfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/346,455B
FILING DATE: 28-NOV-1994
CLASSIFICATION: 530
PRIOR APPLICATION: 530
PRIOR APPLICATION: PATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:

APPLICATION NUMBER: PCT/US95/06613
FILING DATE: 24-MAY-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
                                      36, Application US/08346455B
                                                                                                                                                                                                                                                  ADDRESSEE: MORGAN & FINNEGAN STREET: 345 PARK AVENUE CITY: NEW YORK STATE: NEW YORK COUNTRY: U.S.A.
ZIP: 10154
COMPUTER READABLE FORM: MEDIUM TYPE: Floppy Disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36,434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
STRANDEDNESS: sing
TOPOLOGY: Unknown
MOLECULE TYPE: prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unknown
                                    Sequence 36, Applicat Patent No. 5731167 GENERAL INFORMATION:
                    -08-346-455B-36
RESULT
US-08-
```

rai

213

```
APPLICANT: STRACKE, MARY APPLICANT: SCHIFFMANN, E APPLICANT: HENRY; MURATP TITLE OF INVENTION: PROTITILE OF INVENTION: THEF NUMBER OF SEQUENCES: 69 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RRENT APPLICATION DATA
APPLICATION NUMBER: PO
FILING DATE: 24-MAY-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOROTHY R. AUTH
                                                                                                                                                                                                                                                                                                                                                                                   Conservative
CHARACTERISTICS 788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 25-MAY-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                      SS: single
Unknown
                                                                  protein
                                                                                                                                               DEVELOPMENTAL STAGE:
HAPLOTYPE:
TISSUE TYPE:
CELL TYPE: teratocar
CELL LINE: N-tera 2I
ORGANELLE:
                                                                                                                                                                                                                                                                                                                                                                                                                                        138
                                                                                                                                                                                                                                                                                                                                                                                                              13
                                                                                                                                      ISOLATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NEW YORK: U.S.A.
                          TYPE: amino acid
STRANDEDNESS: si
                                                                                                                                                                                                                                                                                                                                                                                                               YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: pro-
HYPOTHETICAL: NO-
ORIGINAL SOURCE:
ORGANISM: Human
                                                                                                           Human
                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10154
                                                                                                                        STRAIN: INDIVIDUAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYE COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE:
                                                                                                                                                                                                                                  FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                           LOCATION:
                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
ZIP: 10]
                                                                                                                                                                                                                                                                                                                                                                                    13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
CITY: N
                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 13
              LENGIH:
 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME:
                                                                                                                                                                                                                                                                                                                                                                                                                                          126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                            Length 788;
                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROTEIN USEFUL IN CANCER DIAGNOSIS
THERAPY
69
                                                                                                                                                                                                                                                                  DB 1; L4
0.00011;
0;
                                                                                                                                                                                                           putative
n sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATES OF AMERICA; DEPT AND HUMAN SERVICES MOTILITY STIMULATING
                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36,434
R: 2026-4149US3
                                                                                                                                                                                                                                                                            Score 76;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/977,221
                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
US-08-977-221-36
US-08-977-221-36
Sequence 36, Application US/08977221
Patent No. 6084069
GENERAL INFORMATION:
APPLICANT: UNITED STATES OF AMERIC
APPLICANT: OF HEALTH AND HUMAN SER
TITLE OF INVENTION: PROTEIN USEFUL
TITLE OF INVENTION: THERAPY
NUMBER OF SEQUENCES: 69
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -DOS
                                                                                                                                                                                                         N-tera 2D1 page ATX protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MBER: 08/346,455
28-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : 345 PARK AVENUE
NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS
SOFTWARE: WordPerfect 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 20
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 36:
                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                          teratocarcinoma
N-tera 2D1
                                                                                                                                                                                                                                                                           100.0%;
|larity 100.0%;
|Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTH
                                                                                                                                                                                          IDENTIFICATION METHOD:
OTHER INFORMATION: N-
OTHER INFORMATION: AT:
S-08-346-455B-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 28-NOV-
                                                                                                                                                                                                                                                                                                                                                           138
                                                                                                                                                                                                                                                                                                                                 13
                                                                     DEVELOPMENTAL STAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOROTHY R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NEW YORK
U.S.A.
                                                                                                                                                                                                                                                                                                                                                 YMRPVYPTKTEPN
                                                                                                                                                                                                                                                                                                                                  YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 13; Conser
                               Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
  HYPOTHETICAL: NO ORIGINAL SOURCE: ORGANISM: Hum
                                                                                              TISSUE TYPE:
CELL TYPE: t
CELL LINE: N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                        INDIVIDUAL
                                                                                                                                                                   NAME/KEY:
LOCATION:
                                                                                   HAPLOTYPE
                                                                                                                                         ORGANELLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY:
STATE:
                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZIP:
                                                                                                                                                                                                                                                                                                                                                             126
                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                    ğ
```

```
Gaps
                                                                                                                                                                                                                          ö
                                                                                                                                                                                            Length 788;
                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROTEIN USEFUL IN CANCER DIAGNOSIS
THERAPY
69
                                                                                                                                                                                             Score 76; DB 3;
Pred. No. 0.00011;
                                                                                     IDENTIFICATION METHOD:
OTHER INFORMATION: N-tera 2D1 putative
OTHER INFORMATION: ATX protein sequence
                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                        STRACKE, MARY; LIOTTA, LANCE;
SCHIFFMANN, ELLIOTT; KRUTZSCH
HENRY; MURATA, JUN
VENTION: MOTILITY STIMULATING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MBER: PCT/US95/06613
24-MAY-1995
                                                                                                                                                                                                                                                                                                                                            SSULT 3
2T-US95-06613-36
Sequence 36, Application PC/TUS9506613
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IS Floppy Disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
WordPerfect 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DALL.
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/346,455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            08/249,182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: MORGAN & FINNEGAN STREET: 345 PARK AVENUE CITY: NEW YORK
                                                                                                                                                                                                                            ;
0
teratocarcinoma
N-tera 2D1
                                                                                                                                                                                            100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
```

.rai

213

201

copy

69-

831

48

60-

```
HAPLOTYPE:
TISSUE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10154
                                                                                                                                                                                                                                                                                                                                                                                CELL TYPE:
CELL LINE:
ORGANELLE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S-08-346-455B-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                            ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -08-977-221-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION:
                                                                                                                                                                                          LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                      TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RE:
US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <del>a</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-346-455B-34

Sequence 34, Application US/08346455B

Patent No. 5731167

GENERAL INFORMATION:

APPLICANT: UNITED STATES OF AMERICA; DEPT.

APPLICANT: OF HEALTH AND HUMAN SERVICES

TITLE OF INVENTION: MOTILITY STIMULATING

TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS AND

TITLE OF INVENTION: THERAPY

NUMBER OF SEQUENCES: 69

CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        788;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 76; DB 5; Pred. No. 0.00011; D; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                N-tera 2D1 putative
ATX protein sequence
36,434
R: 2026-4149US2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JMBER: US/08/346,455B
28-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/US95/06613 FILING DATE: 24-MAY-1995 NOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WordPerfect 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    08/249,182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MORGAN & FINNEGAN
PARK AVENUE
        REFERENCE/DOCKET NUMBER: 202
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 758-4800
INFORMATION FOR SEQ ID NO: 36:
SEQUENCE CHARACTERISTICS:
LENGTH: 788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                            teratocarcinoma
N-tera 2D1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                             ; IDENTIFICATION METHOD:
; OTHER INFORMATION: N-
; OTHER INFORMATION: AT
PCT-US95-06613-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION DATA
APPLICATION NUMBER: US
                                                                                                                              ss: single
Unknown
                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               126 YMRPVYPTKTFPN 138
REGISTRATION NUMBER:
                                                                                                                                                                                                                    STRAIN:
INDIVIDUAL ISOLATE:
DEVELOPMENTAL STAGE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                TYPE: amino acid
STRANDEDNESS: sing
TOPOLOGY: Unknown
MOLECULE TYPE: prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NEW YORK: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 13, Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE: NEW YORK
                                                                                                                                                                                                          Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 28 CLASSIFICATION:
                                                                                                                                                                         HYPOTHETICAL: No ORIGINAL SOURCE: ORGANISM: Huma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: MC
                                                                                                                                                                                                                                                                             TISSUE TYPE:
CELL TYPE: t
CELL LINE: N
ORGANELLE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: U ZIP: 10154
                                                                                                                                                                                                                                                                HAPLOTYPE:
                                                                                                                                                                                                                                                                                                                                                     NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
CITY: N
                                                                                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: UNITED STATES OF AMERICA; DEPT.
APPLICANT: OF HEALTH AND HUMAN SERVICES
TITLE OF INVENTION: MOTILITY STIMULATING
TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS AND
TITLE OF INVENTION: THERAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 829;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
of A2058 Autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 76; DB 1;
Pred. No. 0.00012;
Mismatches 0;
                                                                                                                       2026-4149PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WordPerfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/977, 221
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/977,221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 34, Application US/08977221
Patent No. 6084069
GENERAL INFORMATION:
APPLICANT: UNITED STATES OF AMER
APPLICANT: OF HEALTH AND HUMAN S
                                  07/822,043
                                                                                NAME: DOROTHY R. AUTH
REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 34:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Putative
sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
larity 100.0%;
Conservative (
            PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/8
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
25-MAY-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IDENTIFICATION METHOD:
                                                                                                                                                                                                                                                               SS: single
Unknown
                                                                                                                                                                                                                                                                                 TOPOLOGY: Unknown
MOLECULE TYPE: protein
HYPOTHETICAL: No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MORGAN &
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Melanoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      127
                                                                                                                                                                                                                                                                                                                                                                                                           DEVELOPMENTAL STAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13
                                                                                                                                                                                                                                                                                                                                                                                          INDIVIDUAL ISOLATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A2058
                                                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: NEW YORK
STATE: NEW YORK
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                l Similarity
13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        115 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                          Human
                                                                                                                                                                                                                                                                                                                                       ORIGINAL SOURCE:
                                                                                                                                                                                                                                                              STRANDEDNESS:
```

Sn

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 829;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LTH AND HUMAN SERVICES

MOTILITY STIMULATING
PROTEIN USEFUL IN CANCER DIAGNOSIS AN
THERAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein
of A2058 Autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 5; 1
0.00012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent No. 5731167

GENERAL INFORMATION:
APPLICANT: UNITED STATES OF AMERICA; DEPT.
APPLICANT: OF HEALTH AND HUMAN SERVICES
TITLE OF INVENTION: MOTILITY STIMULATING
TITLE OF INVENTION: PROTEIN USEFUL IN CANCER
TITLE OF INVENTION: THERAPY
NUMBER OF SEQUENCES: 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 76;
Pred. No.
                                                                                                                                                                                                                                                                             36,434
R: 2026-4149US2
                                                             PCT/US95/06613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     69, Application US/08346455B
IBM PC compatible
YSTEM: PC-DOS/MS-DOS
WordPerfect 5.1
                                                                                                                                                                                                       FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
                                                                                                                       APPLICATION NUMBER: 08/346,455
FILING DATE: 28-NOV-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                 MBER: 08/249,182
25-MAY-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IN & FINNEGAN : AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Putative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                              NAME: DURCELLE 36,434
REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 20
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
ilarity 100.0%;
Conservative 0
                      SOFTWARE: WordPeriece CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/
                                                                                                                                                                                                                                                                                                                     TELEPHONE: (212) 758-48
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IDENTIFICATION METHÓD:
OTHER INFORMATION: Se
                                                                                                                                                                                                                                                                                                                                                                                                                S: single
Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: protein HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                     FILING DATE: 25-MAY-PRIOR APPLICATION DATA:
                                                                                                         PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Melanoma
A2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEVELOPMENTAL STAGE
                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MORGAN
5 PARK A
  IBM PC SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
STRANDEDNESS: si
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . Similarity
13; Conser
                                                                          FILING DATE: 2 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           HYPOTHETICAL: NO ORIGINAL SOURCE: ORGANISM: Huma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         345
                                                                                                                                                                                                                                                                                                                                                                                      829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INDIVIDUAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-346-455B-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CELL TYPE:
CELL LINE:
ORGANELLE:
  COMPUTER:
OPERATING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HAPLOTYPE
                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; OTHER I PCT-US95-06613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
Patent No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 829;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PCT-US95-06613-34
; Sequence 34, Application PC/TUS9506613
; GENERAL INFORMATION:
; APPLICANT: STRACKE, MARY; LIOTTA, LANCE;
; APPLICANT: SCHIFFMANN, ELLIOTT; KRUTZSCH,
; APPLICANT: HENRY; MURATA, JUN
; TITLE OF INVENTION: MOTILITY STIMULATING
; TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS AND
; TITLE OF INVENTION: THERAPY
; NUMBER OF SEQUENCES: 69
; CORRESPONDENCE ADDRESS:
; ADDRESSE: MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDENTIFICATION METHOD:
OTHER INFORMATION: Putative protein
OTHER INFORMATION: sequence of A2058 Autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 76; DB 3;
100.0%; Pred. No. 0.00012;
tive 0; Mismatches 0;
                                                                                                                                                                                     36,434
R: 2026-4149US3
                                                                                                                      MBER: 07/822,043
17-JAN-1992
   CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/346,455
FILING DATE: 28-NOV-1994
                                                                             APPLICATION NUMBER: 08/249,18:
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
                                                                                                                    APPLICATION NUMBER: 07/822,04
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026
TELEPHONE: (212) 758-4800
TELEFHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 34:
SEQUENCE CHARACTERISTICS:
LENGTH: 829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LE FORM:
Floppy Disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 100
13; Conservative
                                                                                                                                                                                                                                                                                                                        SS: single
Unknown
                                                                                                                                                                                                                                                                                                                                                        protein
                                                             PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Melanoma
A2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                DEVELOPMENTAL STAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13
                                                                                                                                                                                                                                                                                                                                                                                                                                  ISOLATE
                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NEW YORK: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       115 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: NEW YORK
STATE: NEW YORK
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                              GI.
TYPE: Pr
                                                                                                                                                                                                                                                                                                                                                                                                      Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE MEDIUM TYPE: F
                                                                                                                                                                                                                                                                                           LENGTH: 829
TYPE: amino a STRANDEDNESS:
TOPOLOGY: Unki
                                                                                                                                                                                                                                                                                                                                                                    HYPOTHETICAL: N
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CELL TYPE:
CELL LINE:
                                                                                                                                                                                                                                                                                                                                                                                                                                INDIVIDUAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANELLE:
                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               HAPLOTYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION:
```

Query Match Best Local S Matches 13

S-08

RESULT

q

δ

MOLECULE

TISSUE

FEATURE

ô

Gaps

STREET:

.rai

```
Floppy Disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA
                                                                                                                                                                                                                                                                                                                                                                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NEW YORK
U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity 13; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE MEDIUM TYPE: F)
                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         345
                                                                                                                                                                                                                                                                                                                                                                                    915
TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         HYPOTHETICAL:
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCT-US95-06613-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE
                                                                                                                                                                                                                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY:
STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                    TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-977-221-69

; Sequence 69, Application US/08977221
; Patent No. 6084069
; GENERAL INFORMATION:
; GENERAL INFORMATION:
; APPLICANT: UNITED STATES OF AMERICA; DEPT.
; APPLICANT: OF HEALTH AND HUMAN SERVICES
; TITLE OF INVENTION: MOTILITY STIMULATING
; TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS AND
; TITLE OF INVENTION: THERAPY
; NUMBER OF SEQUENCES: 69
; CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 915;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1; I
0.00013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                  36,434
R: 2026-4149PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 76;
Pred. No.
                                                              MEDIUM TYPE: Floppy Disk
COMPUTER: Floppy Disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WordPerfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/346,455B
FILING DATE: 28-NOV-1994
CLASSIFICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/06613
FILING DATE: 24-MAY-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
ATORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026-4149PCT
TELEPHONE: (212) 758-4800
TELEPHONE: (212) 758-4800
TELEPHONE: (212) 751-6849
INFORMATION FOR SEQ ID NO: 69:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: A2058 ATX protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             345 PARK AVENUE
NEW YORK
NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IDENTIFICATION METHOD: OTHER INFORMATION:
                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acid
            NEW YORK
U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 13; Conser
YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: amino (STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           915
                                      10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10154
NEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-346-455B-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 69, Application PC/TUS9506613
GENERAL INFORMATION:
APPLICANT: STRACKE, MARY; LIOTTA, LANCE;
APPLICANT: SCHIFFMANN, ELLIOTT; KRUTZSCH,
APPLICANT: HENRY; MURATA, JUN
TITLE OF INVENTION: MOTILITY STIMULATING
TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS AND
TITLE OF INVENTION: THERAPY
NUMBER OF SEQUENCES: 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 76; DB 3; Pred. No. 0.00013;
                                                                                                                                                                                                                                                                                                                                                                                    2026-4149US3
                                                                                   US/08/977,221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PE: Floppy Disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
WordPerfect 5.1
                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/346,455
FILING DATE: 28-NOV-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WordPerfect 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: 2026
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 69:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A2058 ATX protein
                                                                                                                                                                                                                                                                                                                                                                   36,434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IDENTIFICATION METHOD:
OTHER INFORMATION:
IS-08-977-221-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SS: single
Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORGAN &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FORM:
                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               213
                                                                               APPLICATION NUMBER: FILING DATE:
```

213.rai

```
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy Di
COMPUTER: IBM PC COMPS
OPERATING SYSTEM: PC-I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WordPerfect
FILING DATE: 24-MAY-PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION:
S-08-346-455B-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NEW YORK: U.S.A.
                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             201 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity 13; Conser
                                                                                                                                                                                                                                                    979
                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CELL TYPE:
CELL LINE:
ORGANELLE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                      LENGIH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-977-221-
; Sequence 38,
; Patent No. 6
                                                                                                                                                                                                                                                                                                                                                                                  STRAIN:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                       TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
US-08-346-455B-38

; Sequence 38, Application US/08346455B
; Patent No. 5731167
; GENERAL INFORMATION:
; APPLICANT: UNITED STATES OF AMERICA; DEPT.
APPLICANT: OF HEALTH AND HUMAN SERVICES
TITLE OF INVENTION: MOTILITY STIMULATING
TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS AND
TITLE OF INVENTION: THERAPY
NUMBER OF SEQUENCES: 69
; CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 5; I
0.00013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                              FILING DATE: 25-MAY-1994

PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
REGISTRATION NUMBER: 36,434
REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026-4149US2
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEPHONE: (212) 751-6849
INFORMATION FOR SEQ ID NO: 69:
SEQUENCE CHARACTERISTICS:
LENGTH: 915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/346,455B
FILING DATE: 28-NOV-1994
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCT/US95/06613
MBER: PCT/US95/06613
24-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -DOS
                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/346,45
FILING DATE: 28-NOV-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: MORGAN & FINNEGAN STREET: 345 PARK AVENUE CITY: NEW YORK STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS
SOFTWARE: WordPerfect 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: A2058 ATX protein LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
|larity 100.0%;
|Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IDENTIFICATION METHOD:
OTHER INFORMATION:
CT-US95-06613-69
                                                                                                                                                                                                                                                                                                                                                                   SS: single
Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC COM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13
    APPLICATION NUMBER:
FILING DATE: 24-MA
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: NEW YORK COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 13; Conser
                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: Un
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10154
                                                                                                                                                                                                                                                                                                                                                                                                                  HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: UNITED STATES OF AMERICA; DEPT.
APPLICANT: OF HEALTH AND HUMAN SERVICES
TITLE OF INVENTION: MOTILITY STIMULATING
TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS AND
TITLE OF INVENTION: THERAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 979;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence from human liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1; I
0.00014;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 76; DB Pred. No. 0.0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     autotaxin
                                                                                                                  36,434
... 2026-4149PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Habur Formatible IBM PC compatible VSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               38, Application US/08977221
5. 6084069
                                               APPLICATION NUMBER: 07/822,043 FILING DATE: 17-JAN-1992 ATTORNEY/AGENT INFORMATION: NAME: DOROTHY R. AUTH
 ,182
                                                                                                                                  REFERENCE/DOCKET NUMBER: 2026
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 38:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 putative
protein s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
APPLICATION NUMBER: 08/249 FILING DATE: 25-MAY-1994 HOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
ilarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: MORGAN & FIN STREET: 345 PARK AVENUE CITY: NEW YORK STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IDENTIFICATION METHOD:
                                                                                                                                                                                                                                                                              STRANDEDNESS: single
TOPOLOGY: Unknown
                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: protein
HYPOTHETICAL: NO
ORIGINAL SOURCE:
ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: (CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              213
                                                                                                                       REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13
                                                                                                                                                                                                                                                                                                                                                                                                      INDIVIDUAL ISOLATE:
DEVELOPMENTAL STAGE
HAPLOTYPE:
```

.rai

```
APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
                                                                                                                                                                   APPLICATION NUMBER: 08/346,455
FILING DATE: 28-NOV-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026
TELECOMMUNICATION INFORMATION:
TELEFHONE: (212) 758-4800
TELEFAX: (212) 758-4800
TELEFAX: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 38:
SEQUENCE CHARACTERISTICS:
LENGTH: 979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                      SOFTWARE: WordPerfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
larity 100.0%;
Conservative
                                                                                                                      24-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION:
IDENTIFICATION METHOD:
OTHER INFORMATION: PU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SS: single
Unknown
                                                                                                                    FILING DATE: 24-MAY-
CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STAGE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN:
INDIVIDUAL ISOLATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: Unknow MOLECULE TYPE: pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l Similarity
13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           201 YMRPVYPTKTEPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human
             COMPUTER READABLE MEDIUM TYPE: F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HYPOTHETICAL: NO ORIGINAL SOURCE: ORGANISM: Hum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEVELOPMENTAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE TYPE:
10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CELL LINE: ORGANELLE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CELL TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CT-US95-06613-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-346-455B-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HAPLOTYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 12
PCT-US95-06613-38
; Sequence 38, Application PC/TUS9506613
; GENERAL INFORMATION:
; APPLICANT: STRACKE, MARY; LIOTTA, LANCE;
; APPLICANT: SCHIFFMANN, ELLIOTT; KRUTZSCH,
; APPLICANT: HENRY; MURATA, JUN
; TITLE OF INVENTION: MOTILITY STIMULATING
; TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS AND
: TITLE OF INVENTION: THERAPY
: TITLE OF INVENTION: THERAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    979;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        s autotaxin
sequence from human liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.00014;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                36,434
SR: 2026-4149US3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 76;
Pred. No.
   A:
US/08/977,221
                                                                                                                    APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                  APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/346,45
FILING DATE: 28-NOV-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                           NAME: DOROTHY R. AUTH
REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 38:
SEQUENCE CHARACTERISTICS:
LENGTH: 979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    putative protein se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : MORGAN & FINNEGAN
345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
llarity 100.0%;
Conservative
APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IDENTIFICATION METHOD:
                                                                                                                                                                                                                                                                                                                                                                          single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                201 YMRPVYPTKTFPN 213
                                                                                                                                                                                                                                                                                                                                                      TYPE: amino acid
STRANDEDNESS: sing
TOPOLOGY: Unknown
MOLECULE TYPE: prote
HYPOTHETICAL: NO
ORIGINAL SOURCE:
ORGANISM: Human
            APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 YMRPVYPTKTFPN 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OTHER INFORMATION:
OTHER INFORMATION:
-08-977-221-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ISOLATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 13; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YORK
                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEVELOPMENTAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE TYPE:
CELL TYPE:
CELL LINE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INDIVIDUAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANELLE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HAPLOTYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY:
STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
CURRENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
```

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 979;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 67, Application US/08346455B
Patent No. 5731167
GENERAL INFORMATION:
APPLICANT: UNITED STATES OF AMERICA; DEPT.
APPLICANT: OF HEALTH AND HUMAN SERVICES
TITLE OF INVENTION: MOTILITY STIMULATING
TITLE OF INVENTION: PROTEIN USEFUL IN CANCER DIAGNOSIS
TITLE OF INVENTION: THERAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  putative autotaxin
protein sequence from human liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 76; DB 5;
Pred. No. 0.00014;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2026-4149US2
                                                                                                             PCT/US95/06613
MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
```

œ

.rai

213

copy\_201

```
PROTEIN USEFUL IN CANCER DIAGNOSIS AND THERAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRACKE, MARY; LIOTTA, LANCE;
SCHIFFMANN, ELLIOTT; KRUTZSCH,
HENRY; MURATA, JUN
VENTION: MOTILITY STIMULATING
                                                                                                                         US/08/977,221
                                                                                                                                                                                  APPLICATION NUMBER: 08/346,455
FILING DATE: 28-NOV-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCT-US95-06613-67; Sequence 67, Application PC/TUS9506613; GENERAL INFORMATION:
                                                                           YSTEM: PC-DOS/MS-DOS
WordPerfect 5.1
                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 67:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      : Floppy Disk
IBM PC compatible
                                                        COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93.4%;
ilarity 92.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-tera 2D1 ATX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEE: MORGAN & FIN 345 PARK AVENUE NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: STRACKE, MARY APPLICANT: SCHIFFMANN, E APPLICANT: HENRY; MURATA TITLE OF INVENTION: PROTITITE OF INVENTION: THER NUMBER OF SEQUENCES: 69 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                 AUTH
                                                                                                         CURRENT APPLICATION DATA APPLICATION NUMBER: U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IDENTIFICATION METHOD:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                      PRIOR APPLICATION DATA: APPLICATION NUMBER:
                               FORM:
                                           Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; OTHER INFORMATION:
US-08-977-221-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         amino acid
                                                                                                                                                                                                                                                                                                                                 DOROTHY R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       201 HMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NEW YORK
                ZIP: 10154
COMPUTER READABLE
MEDIUM TYPE: F]
                                                                                                                                       FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: UN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10154
               10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION:
                                                                                             SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 861;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 67, Application US/08977221

Patent No. 6084069

GENERAL INFORMATION:
APPLICANT: UNITED STATES OF AMERICA; DEPT.
APPLICANT: OF HEALTH AND HUMAN SERVICES
TITLE OF INVENTION: MOTILITY STIMULATING
TITLE OF INVENTION: THERAPY
NUMBER OF SEQUENCES: 69
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 71; DB 1; L. Pred. No. 0.00079; 1; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                      36,434
                                                                                                                                                                  SOFTWARE: WordPerfect 5.1

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/346,455B
FILING DATE: 28-NOV-1994
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/06613
FILING DATE: 24-MAY-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-tera 2D1 ATX protein
                                                                                                                        MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WordPerfect 5.1
                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 17-JAN-1992
ATTORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/822,043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         345 PARK AVENUE
                FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO: 67: SEQUENCE CHARACTERISTICS: TYPF.
                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER: 36,43,
REFERENCE/DOCKET NUMBER: 20
TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93.4%;
ilarity 92.3%;
Conservative
             E: MORGAN & FINN
345 PARK AVENUE
EW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: Unknown
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION:
IDENTIFICATION METHOD
                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 YMRPVYPTKTFPN 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     201 HMRPVYPTKTFPN
                                                          NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity 12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NEW YORK
                                                                           U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NEW YORK
CORRESPONDENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: amin STRANDEDNES
                                          NEW
             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-346-455B-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY:
                            STREET:
CITY: NE
STATE: N
COUNTRY:
ZIP: 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
US-08-977-221-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET:
CITY: N
STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <del>a</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
```

2026-4149US3

ó:

ö

Indels

Mismatches

Length 861

DB 3; 1 0.00079;

Score 71;

Pred

```
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WordPerfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/06613
FILING DATE: 24-MAY-1995
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/346,455
FILING DATE: 28-NOV-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/249,182
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/822,043
FILING DATE: 17-JAN-1992
ATORNEY/AGENT INFORMATION:
NAME: DOROTHY R. AUTH
REGISTRATION NUMBER: 36,434
REFERENCE/DOCKET NUMBER: 2026-4149US2
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 758-489
INFORMATION FOR SEQ ID NO: 67:
SEQUENCE CHARACTERISTICS:
LENGTH: 861
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: Unknown
MOLECULE TYPE: protein
HYPOTHETICAL: NO
FEATURE:
NAME/KEY: N-1002 DEL NAME/KEY: N-1002 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NAME/KEY: N-tera 2D1 ATX protein
; LOCATION:
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
PCT-US95-06613-67
```

ó Length 861; Indels Score 71; DB 5; Leared. No. 0.00079; L; Mismatches 0; 93.4%; illarity 92.3%; Conservative l Similarity 12; Conserv Query Match Best Local S Matches 12

Qy.

213 d

Search completed: July 23, 2001, 13:22:06 Job time: 359 sec

```
4.5
Compugen Ltd.
version
- 2000
GenCore
(c) 1993
       Copyright
```

model using sw - protein search, OM protein

14:45:54 2001, 19, July Run on

updates/sec Search time 25.97 Seconds (without alignments) 38.131 Million cell up

US-09-483-831-69\_COPY\_201\_ 76

YMRPVYPTKTFPN 13 Title: Perfect score: Sequence:

Gapext BLOSUM62 Gapop 10.0 Scoring table:

residues 76174552 seds, 219241 Searched

0

219241 hits satisfying chosen parameters of Total number

0 2000000000

length: length: seq sed 0B 0B Maximum

Post-processing: Minimum Match Maximum Match Listing first

1 0% 1 100% : 45 summaries

Database

R\_68:\* pir1:\* pir2:\* pir3:\* .. .. .. .. 432

No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, derived by analysis of the total score distribution. . 9 score gand is Pred.

#### SUMMARIES

		ď			SOMMAKIES	
Result No.	Score	Query Match	Length	DB		Description
-	92	100.0			A55144	autotaxin precurso
7	70		885		5545	lî membr
က	69	90.8	96	7	27	hosphodiest
4	69	0	0	7	4117	rotein kinase P
Ŋ	69	0	~	<del>, ,</del>	921	lasma ce
9	99	و	0		2741	lasma cell
7	65	ت	~		A57080	ll surfac
ω	54	ij.	σ	7	5044	pothetical pro
ტ	50	ω.	4	7	1943	pot
	49	4	S	~	0993	cleotide py
	49	4	9	7	0993	cleotide py
	49	4	2	7	1949	thetical p
		س	9	7	0993	cleotide py
	47	Ή.	~	7	0329	eotide py
		9	<u></u>	7	1949	hypothetical prote
		ω	<del>i</del>	7	4623	an endo-1
	42	м	2	7	3372	thetical p
	41	ب	4	7	3251	thetical p
19	41	ж	381	7	T23250	hetical p
	41	m m	N	~	5777	sine prote
	41	m	3	~	8253	ter
	41	ო	S	~	0120	teine pr
	41	m	S	~	458	hetical pro
		Ċ,	_	~	1539	crustacyanin chain
	40	٠. د	0	N	0194	totic fee
	40	3	4	~	584	tical p
		3		N	A015	steine prote
	40	8	46	~	0641	steine protein
	40	~		7	JQ0096	pothetical 17

probable embryo-ab hypothetical prote hypothetical prote	acid carrie ble phophod hetical pro	Serine/threonine-s Myb DNA binding pr hypothetical prote	1 1 1 1 1 1 1 1 1 1	hypothetical prote probable outer mem serotype-1-specifi
8484 8642 1679	G69809 T40657 F64580	572687 T49254 S67089	7269 2476 4802	3992 8196 8102
000	0000	9000	000	0 0 0
	471 528 528	2000	900	
ਿਜਜਜ	51.3	907	000	000
	. თ თ თ ი . ო ო ო ი			
30 31 32	. w w w c	2 M M M	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	44 45 45

#text\_change

10-Sep-1999

Sobel, M.E.; A.A.; T.; Krutzsch, H.C.; Arestad, 1994

autotaxin, motility-stimulating protein, autotaxin precursor - human
N;Contains: phosphodiesterase I (EC 3.1.4.1)
C;Species: Homo sapiens (man)
C;Date: 10-Sep-1999 #sequence\_revision 10-Sep-1999 #to
C;Accession: A55144; A42329
R;Murata, J.; Lee, H.Y.; Clair, T.; Krutzsch, H.C.; A
J. Biol. Chem. 269, 30479-30484, 1994
A;Title: cDNA cloning of the human tumor motility-still
A;Reference number: A55144; MUID:95074054
A;Accession: A55144

A; Molecule type: mRNA
A; Cross-references: GB:L35594; NID:g537905; PIDN:AAA64785.1; PID:g537906
A; Cross-references: GB:L35594; NID:g537905; PIDN:AAA64785.1; PID:g537906
A; Note: parts of this sequence were confirmed by peptide sequencing
R; Stracke, M.L.; Krutzsch, H.C.; Unsworth, E.J.; Arestad, A.; Cioce, V.; Schiffmann,
J. Biol. Chem. 267, 2524-2529, 1992
A; Title: Identification, purification, and partial sequence analysis of autotaxin, a
A; Reference number: A42329; MUID:92129337
A; Reference number: A42329
A; Molecule type: protein
A; Residues: 256-266;422-444;504-507,'AN';510,'X',511-515;533-548;'S',554-559,'N',561-A; Experimental source: A2058 melanoma cells
A; Note: sequence extracted from NCBI backbone (NCBIP:78526, NCBIP:78523, NCBIP:78521,
A; Note: a peptide fragment Tyr-Asp-Val-Pro-Trp-Asn-Glu-Thr-Ile was also found
C; Comment: This protein acts as an autocrine factor to stimulate tumor cell motility.
C; Genetics:

Gene: GDB:ATX

Cross-references: GDB:378346

Cross-references: GDB:378346

Map position: 8q22-8qter

Superfamily: nucleotide pyrophosphatase; somatomedin B homology

Keywords: EF hand; glycoprotein; phosphoric diester hydrolase

55-98/Domain: somatomedin B homology <SBH1>

99-142/Domain: somatomedin B homology <SBH2>

54,463,577,859/Binding site: carbohydrate (Asn) (covalent) #status predicted

915 Length DB 1; 1 5.8e-05; 192 Score Pred.

ö

Gaps

ö

Indels ö Mismatches 8 S ő 100.0%; llarity 100.0%; Conservative ( Query Match Best Local Similarity Matches 13; Conser

## 213

YMRPVYPTKTFPN

# 201 셤

#### 0 RESULT A55453

membrane glycoprotein PC-1, brain specific - rat nucleotide pyrophosphatase (EC 3.6.1.9); phosphodiesterase plasma cell N;Contains:

.4.1)

3.1

(EC

 $\boldsymbol{\mathsf{H}}$ 

Tue

Ŧ

protein

30-Apr-1999

```
factor-stimulated phosphoprot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nucleotide pyrophosphatase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'X', 282-283;303-316;362-364;449-465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (aFGF)-stimulated phosphoprotein
                                                                                                                                                                                                                                                                                        threonine-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              enzyme possessing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                phosphodiesterase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kobayashi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Note: sequence extracted from NCBI backbone (NCBIP:141583)
Superfamily: nucleotide pyrophosphatase; somatomedin B homology
Keywords: glycoprotein; phosphoprotein; phosphotransferase
1-25/Domain: somatomedin B homology (fragment) <SBH>
36/Binding site: AMP (Thr) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                <ODA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   initiator
                                                                                                                                                                                 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   O.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indel
                                                                                                                                                                                                                                                                                                                                                             type: protein
: 1-26,36-56,59-67,68-133,134-144,145-267,268-300
ntal source: liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y . ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Garson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #text_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fibroblast
                                                                                                                                                                                                                                                                                        is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  an
                                                                                                                                 growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      T.; Hori,
                                                                                                    cotein kinase PC-1 (EC 2.7.1.-) - bovine (fragments)
Alternate names: MAFP; major acidic fibroblast growsspecies: Bos primigenius taurus (cattle)
Date: 28-May-1992 #sequence_revision 22-Apr-1995 #tellacesion: A41179; A49308
Oda, Y.; Kuo, M.D.; Huang, S.S.; Huang, J.S.
Biol. Chem. 266, 16791-16795, 1991
Title: The plasma cell membrane glycoprotein, PC-1, Reference number: A41179; MUID:91358477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.00029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (EC 3.6.1.9);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A39210
plasma cell membrane glycoprotein PC-1 - human
N; Contains: nucleotide pyrophosphatase (EC 3.6.1.9);
C; Species: Homo sapiens (man)
C; Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #t
C; Accession: A39216; S21706; S23587; S51030
R; Buckley, M.F.; Loveland, K.A.; McKinstry, W.J.; Gan
J. Biol. Chem. 265, 17506-17511, 1990
A; Title: Plasma cell membrane glycoprotein PC-1. cDN
A; Reference number: A39216; MUID: 91009202
A; Accession: A39216; MUID: 91009202
A; Status: preliminary
A; Molecule type: mRNA
A; Residues: 1-925 < SBUC>
A; Cross-references: GB:J05654
R; Funakoshi, I.; Kato, H.; Horie, K.; Yano, T.; Hori, Arch. Biochem. Biophys. 295, 180-187, 1992
A; Title: Molecular cloning of cDNAs for human fibrob!
A; Reference number: S21706; MUID: 92246539
A; Accession: S21706
A; Status: not compared with conceptual translation
A; Molecule type: mRNA
A; Residues: 1-925 < FUNI>A; Molecule type: mRNA
A; Residues: 1-925 < FUNI>A; Molecule type: protein
A; Molecule type: protein
A; Molecule type: protein
A; Molecule type: protein
A; Residues: 116-121; 247-271, 'X', 273-275; 279-280, 'X', 'X'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PC-1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           on 10-Sep-1999
S51030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ed. No. 0. Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Met-53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    :69
                                                                                                                                                                                                                                                                                                                                                                                                                                             ; Kuo, M.D.; Huang, S.S.; Huang,
Chem. 268, 27318-27326, 1993
The major acidic fibroblast grow
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A49308; MUID:94086550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               it is uncertain whether Met-1
, S.I.; Goding, J.W.
Biochem. 226, 433-443, 1994
:: Biochemical characterization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90.8%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <0D2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Molecule type: protein
Residues: 27-35,'X',37-58
Experimental source: liver
Note: sequence extracted f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity 12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                     Experimental source:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   activities.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Reference number:
Accession: A49308
                                                                                                                                                                                                                                                                                                                    Reference number:
Accession: A41179
Molecule type: pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Note: i
R;Belli,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eur. J. B
A; Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  terase
                                                     RESULT
A41179
protein
N; Altern
C; Specie
C; Date:
C; Access
R; Oda, Y
J; Biol.
A; Refere
A; Refere
A; Residu
A; Refere
A; Refere
A; Refere
A; Refere
A; Refere
A; Refere
C; Superi
C; Superf
C; Superf
C; Superf
C; Superf
C; Superf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                 phosphodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          λ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    predic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -nucleot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          diester
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \vdash
                                                                                                                                                                                                                                                                                                                                                                        drola
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1, '臣'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               era
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #sta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alkaline phosphodiest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -62
                                                                                                                                                                                                                                                                                                                                                                        diphosphoh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          phosphoric
                                                                                                                                                                 brain-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            intestinal
                                                            16-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: mRNA
A; Molecule type: mRNA
A; Residues: 1-66, 'Q', 68-81, 'T', 83-94, 'C', 96, 'A', 98-195, 'A', 197-514, 'E', 516-A; Experimental source: strain Sprague-Dawley
C; Superfamily: nucleotide pyrophosphatase; somatomedin B homology
C; Keywords: coenzyme A; exonuclease; glycoprotein; phosphoprotein; phosphole; 54-97/Domain: somatomedin B homology <SBH1>
F; 54-97/Domain: somatomedin B homology <SBH2>
F; 98-141/Domain: somatomedin B homology site: carbohydrate (Asn) (covalent) #: 53,150,396,408,522,608,829/Binding site: carbohydrate (Asn) (covalent) #: F; 207/Binding site: AMP (Thr) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-May-199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBIP:131478)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                            PID:946419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                    expression of brain-specific nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession. Crossion. Crossion. A; Molecule type: protein
A; Molecule type: protein
A; Molecule type: protein
A; Residues: 22-36; 62-73; 74-81; 82-96 < MAR>
A; Experimental source: kidney
A; Experimental source extracted from NCBI backbone (NCBIP: 132415, NCBIP)
A; Note: the correct order of the fragments is unknown
C; Superfamily: nucleotide pyrophosphatase; somatomedin B homology
C; Keywords: phosphoprotein; phosphoric diester hydrolase
C; Keywords: phosphoprotein; phosphoric diester hydrolase
F; 39/Binding site: AMP (Thr) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #text_change
                                                            change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ഗ
                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                          PIDN:BAA05910.1;
H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indel
                                                                                                                                                                 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of
                                                          #text
                                                                                                                                                                 localization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    phosphodiesterase I (EC 3.1.4.1) - bovine (fragments)
N; Alternate names: 5'-exonuclease
C; Species: Bos primigenius taurus (cattle)
C; Date: 21-May-1988 #sequence_revision 23-Mar-1995 #text
C; Accession: A25274; C48395; A48395; D48395
R; Culp, J.S.; Blytt, H.J.; Hermodson, M.; Butler, L.G.
J. Biol. Chem. 260, 8320-8324, 1985
A; Title: Amino acid sequence of the active site peptide
A; Reference number: A25274; MUID:85234541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R; Maruyama, E.; Iwamatsu, A.; Takashima, S.
Biochem. Mol. Biol. Int. 29, 579-586, 1993
A; Title: Purification and amino acid microsequencing of
A; Reference number: A48395; MUID:93250579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ore 69; DB 2; L
ed. No. 9.1e-05;
Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ore 70; DB 1;
ed. No. 0.00058;
Mismatches 1
Date: 10-Sep-1999 #sequence_revision 10-Sep-1999; Accession: A55453; JU0187; Narita, M.; Goji, J.; Nakamura, H.; Sano, K. Biol. Chem. 269, 28235-28242, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 70;
Pred. No. (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 69;
Pred. No. 9
                                                                                                                                                             cloning, expression, and A55453; MUID:95050605
                                                                                                                                                                                                                                                                                            NID:9464196;
                                                                                                                                                                                                                                                                                                                        Nakamura,
                                                                                                                                                      A; Title: Molecular A55453; MUID: 950
A; Reference number: A55453; MUID: 950
A; Accession: A55453
A; Molecule type: mRNA
A; Residues: 1-885 <NAR>
A; Cross-references: GB: D28560; NID: CR; Narita, M.; Goji, J.; Sano, K.; Ni submitted to JIPID, February 1994
A; Description: Cloning and expression of the constant of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90.8%;
ilarity 84.6%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    th 92.1%;
Similarity 92.3%;
12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: protein
A; Residues: 1-61 <CUL>
R; Maruyama, E; Iwamatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Y TRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YLRPAYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . Similarity 11; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: A; Accession: C48395
                                                                                                                                                                                                                                                                                                                                                                                              A; Reference number: A; Accession: JU0187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <del>Q</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
```

рh

alkaline

; 4

S

I.;

Inoue,

н.,

the human molecule,

J.

Goding,

05-May

4

3.1

(EC

H

ö

ö

Gaps

0

Indels

\_change 10-Sep-199

```
rat neural differentiation and tum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Molecule type: mRNA
Residues: 1-875 < DEI>
Cross-references: GB:Z47987; NID:g806378; PIDN:CAA88029.1; PID:g806379
Cross-references: GB:Z47987; NID:g806378; PIDN:CAA88029.1; PID:g806379
Cross-references: GB:Z47987; NID:g806378; PIDN:CAA88029.1; PID:g806379
Superfamily: nucleotide pyrophosphatase; somatomedin; phosphoprotein; phosphoric diester hydrolase;
Reywords: exonuclease; glycoprotein; phosphoprotein; phosphoric diester hydrolase;
1-22/Domain: cytosolic #status predicted < CYT>
23-45/Domain: transmembrane #status predicted < EXT>
46-875/Domain: somatomedin B homology <SBH2>
51-94/Domain: somatomedin B homology <SBH2>
5206/Binding site: AMP (Thr) (covalent) #status predicted
237,280,289,533,574,594,702,789/Binding site: carbohydrate (Asn) (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 875;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Saccharomyces cerevisiae)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NID:g602367; PID:g602383;
                                                                                                                                                                                                                                                                                                                       #text
                                                                                                                                                                                                                                                   Cell Sufface antique Rels of Lac.

N; Contains: phosphodiesterase I (EC 3.1.4.1)

C; Species: Rattus norvegicus (Norway rat)
C; Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #te:
C; Accession: A57080

R; Deissler, H.; Lottspeich, F.; Rajewsky, M.F.
J. Biol. Chem. 270, 9849-9855, 1995
A; Title: Affinity purification and cDNA cloning of rat
A; Reference number: A57080; MUID:95247775
A; Accession: A57080
A; Status: preliminary
A; Molecule type: mRNA
A; Residues: 1-875 < DEI>
A; Cross-references: GB: Z47987; NID:9806378; PIDN:CAA88
C; Superfamily: nucleotide pyrophosphatase; somatomedin
C; Keywords: exonuclease; glycoprotein; phosphoprotein;
F; 1-22/Domain: cytosolic #status predicted <TMM>
F; 23-45/Domain: cytosolic #status predicted <TMM>
F; 46-875/Domain: somatomedin B homology <SBH>
F; 51-94/Domain: somatomedin B homology <SBH>
F; 95-138/Domain: somatomedin B homology <SBH>
F; 206/Binding site: AMP (Thr) (covalent) #status predicter carboh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 8
S50443
hypothetical protein YEL016c - yeast (Saccharomyces ce C; Species: Saccharomyces cerevisiae
C; Species: Saccharomyces cerevisiae
C; Date: 28-May-1993 #sequence_rev1sion 24-Feb-1995 #te C; Accession: S50443
R; Dietrich, F.S.
submitted to the EMBL Data Library, December 1994
A; Description: Saccharomyces cerevisiae chromosome V c A; Reference number: S50428
A; Accession: S50443
A; Molecule type: DNA
A; Residues: 1-493 < DIE>
A; Cross-references: EMBL: U18530; NID: g602367; PID: g602 C; Genetics:
A; Map position: 5L
 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.0041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ore 54; DB 2;
ed. No. 0.17;
Mismatches
     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 65;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 54;
Pred. No.
  ä
                                                                                                                                                                                                                                            rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    85.5%;
84.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              71.1%;
ilarity 69.2%;
Conservative
  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                        surface antigen RB13-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13
                                                      13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           l Similarity
11; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ||| :|||||||
YMRAMYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MRPVYPTKTFPN
    11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \boldsymbol{\sigma}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Н
                                                                                                      230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             197
                                                       N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           118
    Matches
                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
S19437
                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                        οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ö
                                                                                                                                                                                                                                                                      tran
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     trai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and analys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     membra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 predicted
                                                                                                                                                                                                                                                                                                                                                                         (covalent)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (EC
                                                                                                                                                                                                                                                                   hydrolase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    olase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (EC 3.6.1.9); phosphodiesterase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hydr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  05-May-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        deduced
                                                                                                                                                                                                                                                                                                                                                                          (Asn)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                 diester
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  diester
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PID:9200235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PID:92002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (covalent)
                                                                                                                                                                                                                                                                                                                                                                          carbohydrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cloning
                                         A; Status: preliminary
A; Molecule type: mRNA
A; Molecule type: mRNA
A; Residues: 1-80 < BEL>
C; Genetics:
A; Genetics:
A; Genetics:
A; Genetics:
A; Genetics:
C; Genetics:
A; Genetics:
A; Genetics:
A; Genetics:
C; Genetics:
A; Genetics:
A; Genetics:
A; Genetics:
C; Genetics:
A; Genetics:
A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 as Glu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      n B homology
phosphoric c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   form of
                                                                                                                                                                                                                                        B homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            925;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          905;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: mRNA
A; Residues: 1-905 < VAN>
A; Residues: 1-905 < VAN>
A; Cross-references: GB:J02700; NID:g200236; PIDN:AAA39893.1;
A; Note: the authors translated the codon CAG for residue 24 a R; Van Driel, I.R.; Wilks, A.F.; Pietersz, G.A.; Goding, J.W. Proc. Natl. Acad. Sci. U.S.A. 82, 8619-8623, 1985
A; Title: Murine plasma cell membrane antigen PC-1: Molecular A; Reference number: I59055; MUID:86094275
A; Accession: I59055
A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIDN: AAA39892.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              carbohydrate (Asn)
 #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Primary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          somatomedin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.0009;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genetics:
Introns: 62/3; 87/1; 126/1; 168/1; 188/2
Superfamily: nucleotide pyrophosphatase; somatomedin
Keywords: coenzyme A; glycoprotein; phosphoprotein;
Keywords: coenzyme A; glycoprotein; phosphoprotein;
86-126/Domain: somatomedin B homology <SBH1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
0.0028;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ಡ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N.Alternate names: nucleotide pyrophosphatase (EC) Species: Mus musculus (house mouse)
C; Species: Mus musculus (house mouse)
C; Date: 10-Sep-1999 #sequence_revision 10-Sep-199(C; Accession: A27410; I59055; S38354
R; van Driel, I.R.; Goding, J.W.
J. Biol. Chem. 262, 4882-4887, 1987
A; Title: Plasma cell membrane glyconrotic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Title: Plasma cell membrane glycoprotein PC-1. A; Reference number: A27410; MUID:87165906 A; Accession: A27410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 69; DB
Pred. No. 0.0
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
A; Residues: 203-219 <RES>
A; Cross-references: GB:M12552; NID:g200234; F
B; Belli, S.I.; van Driel, I.R.; Goding, J.W.
Eur. J. Biochem. 217, 421-428, 1993
A; Title: Identification and characterization
A; Reference number: S38354; MUID:94039066
A; Accession: S38354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66;
No.
S51030; MUID:95094801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  127-170/Domain: somatomedin B homology
161,267,323,459,567,624/Binding site: c
238/Binding site: AMP (Thr) (covalent)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90.8%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        86.8%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Residues: 35-219 <BEL>
A; Cross-references: EMBL:L04516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Match
Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA A; Residues: 35-219 <
number: S51030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                             A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
 A; Reference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Cross-C; Geneti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
O
```

#status

.; 0

;;

Indels

Ø

46

9867,

8199,

9871,

cosmids

29-0ct-1999

MIPS: YEL016

GSPDB:GN00005;

ö

Gaps

ö

Indel

493

Length

.rpr

2001

41:09

10:

4

2

Jul

Tue

×

ö

```
Mayer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mayer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hypothetical protein C27A7.1 - Caenorhabditis elegans
C; Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C; Accession: T19494
R; Harris, B.
submitted to the EMBL Data Library, October 1996
A; Reference number: Z19132
A; Reference number: Z19132
A; Reference number: Z19132
A; Reference number: L19494
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: DNA
A; Residues: 1-829 <WIL>
A; Cross-references: EMBL: Z81041; pIDN: CAB02784.1; GSPDB: GN00023; CESP: C27A7.1
A; Experimental source: clone C27A7
C; Genetics:
A; Genetics:
A; Genetics:
A; Genetics:
A; Map position: 5
A; Introns: 12/3; 37/1; 100/3; 176/2; 272/3; 392/1; 427/1; 479/2; 566/2; 588/3; 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleotide pyrophosphatase homolog T16L4.190 - Arabidopsis thaliana C; Species: Arabidopsis thaliana (mouse-ear cress)
C; Species: Arabidopsis thaliana (mouse-ear cress)
C; Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 15-Oct-1999
C; Accession: T09931
R; Bevan, M.; Rose, M.; Hempel, S.; Entian, K.D.; Bancroft, I.; Mewes, H.W.; Maye submitted to the Protein Sequence Database, June 1999
A; Reference number: 216897
A; Accession: T09931
A; Molecule type: DNA
A; Residues: 1-496 <BEV>
A; Cross-references: EMBL:ALO79344; GSPDB:GN00062; ATSP:T16L4.190
A; Experimental source: cultivar Columbia; BAC clone T16L4
C; Genetics:
A; Gene: ATSP:T16L4.190
A; Map position: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      588/3;
                                              H.W.;
         15-0ct-1999
                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                               Mewes,
                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                          .210
C; Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change C; Accession: T09933
R; Bevan, M.; Rose, M.; Hempel, S.; Entian, K.D.; Bancroft, I.; h submitted to the Protein Sequence Database, June 1999
A; Reference number: 216897
A; Accession: T09933
A; Molecule type: DNA
A; Residues: 1-461 <BEV>
A; Residues: 1-461 <BEV>
A; Cross-references: EMBL:AL079344; GSPDB:GN00062; ATSP:T16L4.21(A; Experimental source: cultivar Columbia; BAC clone T16L4
C; Genetics:
A; Gene: ATSP:T16L4.210
A; Map position: 4
           16-Jul-1999 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                           ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;<del>;</del>
                                                                                                                                                                                                                                                                                       2;
                                                                                                                                                                                                                                                                                       ore 49; DB 2 ed. No. 1.1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                     Score 49;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 49;
Pred. No.
                                                                                                                                                                                                                                                                                       64.5%;
ilarity 80.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64.5%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity 80.08; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        227
                                                                                                                                                                                                                                                                                                         Similarity 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ||:|||||
PSYPSKTFPN
                                                                                                                                                                                                                                                                                                                                                                                    ||:|| ||||
PVFPTMTFPN
                                                                                                                                                                                                                                                                                                                                                                PVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       218
                                                                                                                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7
                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
T19494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                     chromc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  K.F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mayer,
                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                    and CRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nucleotide pyrophosphatase homolog T16L4.200 - Arabidopsis thaliana ("Species: Arabidopsis thaliana (mouse-ear cress)
C; Species: Arabidopsis thaliana (mouse-ear cress)
C; Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 15-Oct-1999
C; Accession: T09932
R; Bevan, M.; Rose, M.; Hempel, S.; Entian, K.D.; Bancroft, I.; Mewes, H.W.; submitted to the Protein Sequence Database, June 1999
A; Reference number: Z16897
A; Reference number: Z16897
A; Residues: 1-457 <BEV>
                                                                  #text_change 12-Dec-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                   7.9 kb fragment between PGK1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Residues: 1-457 <BEV>
A;Cross-references: EMBL:AL079344; GSPDB:GN00062; ATSP:T16L4.200
A;Experimental source: cultivar Columbia; BAC clone T16L4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      743;
                                                                                                                                                                                                                                                                                                                                                                 Ē
               cerevisiae)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           457
                                                                                                                                                                                                                                                                                                                                                                 J.; Hilger,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               △BOL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
 992
                                                                                                                      March 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            I-106, 'H', 108-119, 'F', 121-211, 'V', 213-743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .;
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 50; DB 2
Pred. No. 1.2;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
```

ω ;

Conservative

Similarity 8; Conser

Query Match Best Local S Matches 8

222

:| | :||:||| 210 FMIPSFPTETFPN

d

10

RESULT

13

1 YMRPVYPTKTFPN

ð

65.8%; 61.5%;

transmembrane protein

A; Map position: C; Keywords: tran

A; Residues: C; Genetics:

677/1;

ö

¥

cress)

Score 49; Pred. No.

64.5%; ilarity 80.0%; Conservative

Similarity 8; Conserv

Query Match Best Local S Matches 8

A;Gene: ATSP:T16L4.200 A;Map position: 4

C; Genetics:

103

||:|| |||| 94 PVFPTMTFPN

d

PVYPTKTFPN

ず

ğ

nucleotide pyrophosphatase homolog T16L4.210 C; Species: Arabidopsis thaliana (mouse-ear cr

RESULT T09933

```
nucleotide pyrophosphatase homolog - rice
C; Species: Oryza sativa (rice)
C; Species: Oryza sativa (rice)
C; Date: 24-Mar-1999 #sequence_revision 24-Mar-1999 #text_change 24-Mar-1999
C; Accession: T03293
R; Hsing, Y.C.; Tsao, C.V.; Chow, T.; Hsieh, J.; Chen, Z.
Submitted to the EMBL Data Library, April 1995
A; Description: Rice early embryogenesis gene.
A; Reference number: Z14889
A; Reference number: Z14889
A; Reference number: Z14889
A; Reference number: Z14889
A; Residues: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: mRNA
A; Residues: 1-479 < HSI>
A; Cross-references: EMBL:025430; NID:9818848; PID:9818849
A; Experimental source: strain Tainung 67
C; Genetics:
A; Note: OSE4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical protein C27A7.3 - Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Species: Caenorhabditis elegans
C; Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C; Accession: T19495
R; Harris, B.
submitted to the EMBL Data Library, October 1996
A; Reference number: 219132
A; Reference number: 219132
A; Recession: T19495
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: DNA
A; Residues: 1-674 <WIL>
A; Cross-references: EMBL:281041; PIDN:CAB02785.1; GSPDB:GN00023; CESP:C27A7.3
A; Experimental source: clone C27A7
C; Genetics:
A; Map position: 5
A; Introns: 61/1; 98/3; 191/1; 220/3; 268/3; 340/1; 392/2; 475/2; 496/3; 537/1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      537/1
                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
  496;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          47
                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                      ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
  3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ä
 Score 48; DB 2
Pred. No. 1.8;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 47; DB 2
Pred. No. 2.5;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 45; DB 2
Pred. No. 7.7;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001, 14:45:5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61.8%;
illarity 70.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59.2%;
illarity 70.0%;
Conservative
Query Match
Best Local Similarity 80.0%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            July 19,
                                                                                                                             ||:|| ||||
| 146 PVFPTLTFPN 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |::|| |||||
| 129 PIFPTLTFPN 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 7; Conser
                                                                                                  PVYPTKTFPN 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ouery Match
Best Local Similarity
Matches 7; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | :|:||||
166 PSFPSKTFPN 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4 PVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4 PVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Search completed:
Job time: 153 sec
                                                                                                    4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    time:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
T19495
                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QY
```

```
4.5
Compugen Ltd
 version
- 2000
 GenCore (c) 1993
        Copyright
```

model protein search, using sw ı OM protein

14:47:09; July 19, 2001, Run on:

Search time 16.91 Seconds (without alignments) 26.335 Million cell updates/sec

US-09-483-831-69\_COPY\_201\_21 76 Title:

YMRPVYPTKTFPN 13 Н score: Sequence: Perfect

BLOSUM62 Gapop 10.0 Scoring table:

0.5 Gapext

34255486 residues 93435 seqs, Searched:

93435 hits satisfying chosen parameters: of Total number

sed DB DB

length: 0 length: 2000000000 Minimum Maximum

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

SwissProt\_39:\* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution. score gand is

#### SUMMARIES

	Description	39	41	6802 mus m	997 sacc	5353	Q02438 hordeum vul	7798	007 homarus		9zlb5 mus mus	20721 lyco	951	37	p8 mesostig	13185	7184	559	2512	4231	230 mus	5 mus	04	46	469		P21033 vaccinia vi	P07617 vaccinia vi	P33052 variola vir	Q57911 methanococc	0	488	9 mus muscu	520
	A	PPD1_BOVIN	PC1_HUMAN	PC1_MOUSE	YEB6_YEAST	YCR6_YEAST	E13E_HORVU	BGAL_THEET	CRA2_HOMGA	MD21_HUMAN	MD21_MOUSE	CYSL_LYCES	RRPO_PMV	HMD2_SOLTU	YCF2_MESVI	L		HMDH_NICSY	CRAB_SQUAC	HB23_MOUSE	HB21_MOUSE	HB22_MOUSE	HB24_MOUSE	HB2I_MOUSE	HB2J_MOUSE	GPT_SULAC	PAP2_VACCC	PAP2_VACCV	PAP2_VARV	SYFA_METJA	ı	UBA2_YEAST	>	HRX_MOUSE
	DB	1	-	7	Н	٦	7	Н	Н	Н	Н	-	Н	-	-	7	<b>ન</b>	7	-4	-	<del></del>	႕	~	-Τ	<del>.</del> –	1	Н	Н	<b>~</b>	<del>,  </del>	Н	~	H	⊣
,	_	61	~	~	Φ	4	$\Box$	7		0	0	4	4	Φ	Φ	Ó	~	Ó	~	(A)	Ó	Ó	Ó	Ó	Ó	2	m	$\omega$	ניז	œ	0	63	S	86
* uer	Match	8.06	·	Q		ک	В	ر. د		5	5	٠. ن	∾.	ä	ij	Ξ.	0	0	ထ	΄. α	ω	α	о С	΄. α	ω	•	•	•	•	48.7	48.7	48.7	48.7	
	Score	69																																
Result	No.	∺	7	m	7	ഹ	φ	7	80	თ	10	11	12	. 13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	. 28	29	30	31	32	33

13

42

1 YMRPVYPTKTFPN |:|| ||||||| .30 YLRPAYPTKTFPN

g

Qγ

\_HUMAN

RESULT

PC1\_HUMAN STANDARD; PRT; 873 AA.
PC2413; Q9Y6K3; Q9UP61;
01-AUG-1991 (Rel. 19, Created)
01-AUG-1991 (Rel. 19, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
PLASMA-CELL MEMBRANE GLYCOPROTEIN PC-1 [INCLUDES: ALKALINE PHOSPHODIESTERASE I (EC 3.1.4.1); NUCLEOTIDE PYROPHOSPHATASE (EC 3.6.1.9) (NPPASE)].
PDNP1 OR PC1 OR NPPS.
Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

PC1, DT PC1, DT PC1, DE PC1, D

ob se chrem se chrem		0;
homo sapien saccharomyc archaeoglob chlamydia t thermoanaer homo sapien cyanidium c cyanophora bacillus su neisseria m neisseria m	(5'-NUCLEOTIDE; ; Euteleostomi; ecora; Bovoidea; of the active NUCLEOTIDES 'HYDROXY-TERMINATED' INE INTERMEDIATE.	0; Gaps
3164 22224 28205 0561 0561 8609 19594 19594 1003	'-NUCLEOTIDE Euteleostomi; ora; Bovoidea; ovine intestin f the active CLEOTIDES YDROXY-TERMINA	
P 222 P 228 P 268 P 399 P 399 P 575	ASE) brata ia; P de of ation S 5'- OF 3-	DB 1; Length 61 .9e-05; es 1; Indels
SST ST ST ST ST ST ST MA MA MA MA MA MA MA MA MA MA MA MA MA	update) update) rexoNUCLEAS ta; Vertebr Ruminantia Ruminantia ite peptide identificat identificat TERMINI OF TERMINI OF	; 1 . 1 tch
HRX_HUMAN SC15_YEAST THIE_ARCFU GP7D_CHLTR BGAL_THETU FOH1_HUMAN APCE_CYACA APCE_CYAPA THIE_BACSU TONB_NEIMC TONB_NEIMA TONB_NEIMB	PRT; d) equence nnotatio 4.1) (5' ). Crania dactyla; dson M., active s ase and (1985). OLYTICAL 'HYDROXY 'HYDROXY	Score 69 Pred. No 1; Misma
<b>делененен</b>	ARD; P  , Created)  , Last sequited; Last anno (EC 3.1.4.1 FRAGMENT).  Chordata; C Cetartiodac S.  Hermodso of the act odiesterase onine."; 320-8324(19 TY: HYDROLY M THE 3-'HY M THE 3-'HY S.	. 8. 8. 9. 1.
3969 210 310 305 305 305 322 222 280 280 280	NDARD NDARD 14, C 14, L 28, L 30, Cet 39 11, Cet 39 11, Cet 39 6999	90 84 vativ
4444444444 0.7.7.0044444 0.4.4.4.7.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	N STAND?  90 (Rel. 14, 90 (Rel. 14, 90 (Rel. 18, 28, 16, 16, 16, 17, Metazoa; Cartheria;	90. Similarity 84. 1; Conservative
	1 1 1 396; 396; 396; 396; 3PR-19 SPHODI SPHODI SPHODI Tauru Tauru 1, 1986; 1, 1986;	Match Local es 1
88888884444 988888888888888888888888888	RESULT PPD1_BOV ID PPD1_BOV DT O1-1 DT O1-1 DT O1-1 DT O1-1 DT O1-1 DT O1-1 CC Bov RR KX MED1 RR *Am RT Site CC CC SC CC	Query Best L Matche
	RESULT OCCUPATE TO SEE SULT OC	<b>СМ</b> 2

.rsp

 $\sim$ 

```
196 MRPVYPTKTFPN
                                                                                                                                                                                    MRPVY PTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Acad.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mammalia; Eutheri
NCBI_TaxID=10090;
679
696
121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Immuno1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FUNCTION,
                                                                                                                 Query Match
Best Local S
Matches 12
CARBOHYD
CARBOHYD
                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             between
                                 VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Proc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acid
                                                                                                                                                                                                                                                                                      MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
(R)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>-</u>:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                      SULT
                                                                                                                                                                                                                                                                                                                                                                                                                                        GN
OS
OC
OC
OC
OC
OC
RR
RR
RR
RT
RR
RT
RR
RT
RR
RT
RR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RA
RT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RA
RT
RT
RL
RL
RD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RA
RT
FT
FT
FT
SO
                                                                                                                                                                                                                                                                                                                                                                                         DE
DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RL
RN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RP
RX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RP
RX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                      던
                                                                                                                                                                                                                                                                                                                                                                       Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OLIGO-NUCLEOTIDES.

-!- CATALYTIC ACTIVITY: A DINUCLEOTIDE + H(2)0 = 2 MONONUCLEOTIDE.

-!- SUBGUNIT: HOMODIMER, DISULFIDE-LINKED.

-!- SUBCELLULAR LOCATION: TYPE II MEMBRANE PROTEIN.

-!- TISSUE SPECIFICITY: EXPRESSED IN PLASMA CELLS AND ALSO IN A NUMBER OF NON-LYMPHOID TISSUES, INCLUDING THE DISTAL CONVOLUTED TUBULE OF THE KIDNEY, CHONDROCYTES, AND EPIDIDYMIS.

-!- SIMILARITY: CONTAINS 2 SOMATOMEDIN-B TYPE DOMAINS.

-!- SIMILARITY: CONTAINS 2 SOMATOMEDIN-B TYPE DOMAINS 2 SOMATOMEDIN-B TYPE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           collaborati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                      FUNCTION: MAY HAVE A ROLE IN THE REGULATION OF N-GLYCOSYLATION.
CATALYTIC ACTIVITY: HYDROLYTICALLY REMOVES 5'-NUCLEOTIDES
SUCCESSIVELY FROM THE 3'-HYDROXY TERMINI OF 3'-HYDROXY-TERMINATED
OLIGO-NUCLEOTIDES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYTOPLASMIC (POTENTIAL).
SIGNAL-ANCHOR (TYPE-II MEMBRANE PROTEIN)
EXTRACELLULAR (POTENTIAL).
SOMATOMEDIN-B LIKE.
                           SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE=91009202; PubMed=2211644;

Buckley M.F., Loveland K.A., McKinstry W.J., Garson O.M., Goding J.

Buckley M.F., Loveland K.A., and PC-1. cDNA cloning of the human molecule, amino acid sequence, and chromosomal location.";

J. Biol. Chem. 265:17506-17511(1990).
                                                                                                                                                                                                                                                                                                                                                     ж
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (POTENTIAL). (POTENTIAL). (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                      Funakoshi I., Kato H., Horie K., Yano T., Hori Y., Kobayashi H
Inoue T., Suzuki H., Fukui S., Tsukahara M., Kajii T.,
Yamashina I.;
                                                                                                                                                                                                                                                                                                                                                         Vigneri
                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                Yamashina I.;
"Molecular cloning of cDNAs for human fibroblast nucleotide
                                                                                                                                                                                                                                                                                                                                         Goldfine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF01033; Somatomedin_B; 2.
PRINTS; PR00022; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDIN_B; 2.
Glycoprotein; Transmembrane; Duplication; Signal-anchor;
                                                                                                                                                                                                                                                                                                     SEQUENCE OF 93-133 FROM N.A., AND VARIANT GLN-121.
MEDLINE-99408501; PubMed-10480624;
Pizzuti A., Frittitta L., Argiolas A., Baratta R., Gold Bozzali M., Ercolino T., Scarlato G., Iacoviello L., V. Tassi V., Trischitta V.;
"A polymorphism (K1210) of the human glycoprotein PC-1 region is strongly associated with insulin resistance." Diabetes 48:1881-1884(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                        295:180-187(1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ALT_INIT
                                                                                                                                                    SEQUENCE FROM N.A.
MEDLINE-92246539; PubMed-1315502;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; M57736; AAA63237.1; -.
EMBL; D12485; BAA02054.1; -.
EMBL; D12485; BAA02053.1; ALT_I
EMBL; AF067177; AAD38420.1; -.
EMBL; AF067178; AAD38421.1; -.
PIR; A39216; A39216.
MIM; 173335; -.
InterPro; IPR001212; -.
InterPro; IPR002591; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF01663; Phosphodiest;
Pfam; PF01033; Somatomedin_B
                                                                                                                                                                                                                                                                       Biophys.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24
845
1136
127
233
233
245
548
648
NCBI_TaxID=9606;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Arch. Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Polymorphism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                      [2]
F
                                                                                                                                                                                                                                                                                                                       FT
FT
FT
                                                                                                                                   RN
RP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KW
FT
FT
```

```
h a collaboration -
                                                                                                                                                                                                                    <u>;</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3'-HYDROXY-TERMINATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PARTIAL SEQUENCE.
MEDLINE=85056299; PubMed=3917281;
Stearne P.A., van Driel I.R., Grego B., Simpson R.J., Goding J.W.;
"The murine plasma cell antigen PC-1: purification and partial amino
                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FUNCTION: MAY HAVE A ROLE IN THE REGULATION OF N-GLYCOSYLATION CATALYTIC ACTIVITY: HYDROLYTICALLY REMOVES 5'-NUCLEOTIDES SUCCESSIVELY FROM THE 3'-HYDROXY TERMINI OF 3'-HYDROXY-TERMINAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=87165906; PubMed=3104326; van Driel I.R., Goding J.W.; van Driel I.R., Goding J.W.; "Plasma cell membrane glycoprotein PC-1. Primary structure deduced from cDNA clones."; J. Biol. Chem. 262:4882-4887(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MONONUCLEOTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ^.;
cloning of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OF
      (POTENTIAL) (POTENTIAL)
                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                THE SURFACE
                                                                                                                                                                                                                                                                                                                                                                                                                   o/1 AA.

0/1 AA.

01-AUG-1991 (Rel. 19, Last sequence update)

30-MAY-2000 (Rel. 39, Last annotation update)

PLASMA-CELL MEMBRANE GLYCOPROTEIN PC-1 [INCLUDES: ALKALINE PHOSPHODIESTERASE I (EC 3.1.4.1); NUCLEOTIDE PYROPHOSPHATASE (EC 3.6.1.9) (NPPASE)].

Mus musculus (Mouse)

Eukarvott
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SWISS-PROT entry is copyright. It is produced through
en the Swiss Institute of Bioinformatics and the EM
                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=91271356; PubMed=1647027; Rebbe N.F., Tong B.D., Finley E.M., Hickman S.; "Identification of nucleotide pyrophosphatase/alkaline phosphodiesterase I activity associated with the mouse differentiation antigen PC-1.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUCCESSIVE.

SUCCESSIVE.

OLIGO-NUCLEOTIDES.

CATALYTIC ACTIVITY: A DINUCLEOTIDE + H(2)0 = 2 MONC SUBUNIT: HOMODIMER, DISULFIDE-LINKED.

SUBCELLULAR LOCATION: TYPE II MEMBRANE PROTEIN.

TISSUE SPECIFICITY: SELECTIVELY EXPRESSED ON THE ST ANTIBODY-SECRETING CELLS.

SIMILARITY: CONTAINS 2 SOMATOMEDIN-B TYPE DOMAINS.

SIMILARITY: CONTAINS 2 SOMATOMEDIN-B TYPE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3.
J
                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Goding J.W
molecular
                                                                                                  CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88:5192-5196(1991)
                                                                                                                                                                        Score 69; DB 1; L
Pred. No. 0.00031;
); Mismatches 0;
                                                                           /FTId=VAR_008873.
872808C20B048070
       (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 169-185 FROM N.A.

MEDLINE=86094275; PubMed=3001713;

van Driel I.R., Wilks A.F., Pietersz G.A., Go
"Murine plasma cell membrane antigen PC-1: mo
and analysis of expression.";

Proc. Natl. Acad. Sci. U.S.A. 82:8619-8623(19

-!- FUNCTION: MAY HAVE A ROLE IN THE REGULATION:
-!- CATALYTIC ACTIVITY: HYDROLYTICALLY REMOVE
N-LINKED
N-LINKED
K -> O.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AND SEQUENCE FROM N.A
                                                                                                                                                                                                                     ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence.";
umunol. 134:443-448(1985)
                                                                                                                                                                         90.8%;
100.0%;
                                                                                                      99929
                                                                                                                                                                                                                         Conservative
       679
696
121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sci
                                                                                                                                                                                                                                                                                                                      207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                        ΑŻ,
                                                                                                                                                                                               Similarity 12; Conser
```

.rsp

213

3

Page

1

```
its
way
ial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ay
al
                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaborati between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on I use by non-profit institutions as long as its content is in no w modified and this statement is not removed. Usage by and for commerci entities requires a license agreement (See http://www.isb-sib.ch/announc
        fit institutions as long as its content is in no versement is not removed. Usage by and for commercise alicense agreement (See http://www.isb-sib.ch/announctolicense@isb-sib.ch).
                                                          restrictions on
                                                                                                                                                                                                          MEMBRANE PROTEIN)
                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ບ >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=S288C / AB972;
Dietrich F.S., Mulligan J.T., Hennessey K.M., Allen E., Araujo Dietrich F.S., Mulligan J.T., Hennessey K.M., Allen E., Cherry Aviles E., Berno A., Brennan T., Carpenter J., Chen E., Cherry Chung E., Duncan M., Guzman E., Hartzell G., Hunicke-Smith S., Hyman R., Kayser A., Komp C., Lashkari D., Lew H., Lin D., Mosedale D., Nakahara K., Namath A., Norgren R., Oefner P., Oh Petel F.X., Roberts D., Sehl P., Schramm S., Shogren T., Smith Taylor P., Wei Y., Yelton M., Botstein D., Davis R.W.; Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                    <u>;</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cerevisiae (Baker's yeast).
1gi; Ascomycota; Saccharomycotina; Saccharomycete;
1les; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Rel. 31, Created)
(Rel. 31, Last sequence update)
(Rel. 36, Last annotation update)
, 57.4 KDA PROTEIN IN PMP2-VAC8 INTERGENIC REGION
                                                                                                                                                                                                                                                                                                                                                              871;
                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                               Length
 There are no
                                                                                                                                                                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                               DB 1;
0.001;
                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                               :99
 the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                               Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                   ï
                                                                                                                                                                                                                                                                                                                                                             86.8%;
.larity 91.7%;
.Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                207
                                                                                                                                                                                                                                                                                                                                                                                                          \omega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Saccharomyces cerevi
Eukaryota; Fungi; As
Saccharomycetales; S
NCBI_TaxID=4932;
          use by non-profit modified and this st
                                                                                                                                                                                                                                                                                                                                                                         Similarity 11; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                     MRPVYPTKTFPN
                                  requires
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FROM N.A
                                             or send an email
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-FEB-1995 (1
01-FEB-1995 (1
15-JUL-1998 (1
HYPOTHETICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YEB6_YEAST
P39997;
                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YEL016C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B6_YEAST
                                                                                                                                                                                                                                                                                                                                                                                                                               196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SULT
d
                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
```

```
::0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           n no way commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce, or send an email to license@isb-sib.ch).
                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seven open reading
                                                                                                                                                                                                                                                                                                                                                                              Saccharomycetes
                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 G., Dumont J., Hilger F.;
.9 kb fragment between PGK1
                                                                                                                                                                                                                                                                                                                                         REGION
                                                                                                                            493;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      743;
                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                          databases
                                                                                                                                                                                                                                                                                            01-MAY-1992 (Rel. 22, Created)
01-MAY-1992 (Rel. 22, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
HYPOTHETICAL 84.9 KDA PROTEIN IN PMP1-FEN2 INTERGENIC
YCR026C OR YCR26C OR YCR246.
Saccharomyces cerevisiae (Baker's yeast).
                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
2385E9F4BA948B0D CRC64
                                                                                       10E67A05C6DEDF09 CRC64
                                                                                                                                                                                                                                                                                                                                                                 risiae (Baker's yeast).
Ascomycota; Saccharomycotina; Saccl
Saccharomycetaceae; Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;;
5
                                                                                                                                                      2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      presence of
                                                                                                                          DB 1;
0.063;
                                                                                                                                                                                                                                                                                                                                                                                                                                            '., Wurst H.;
to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :;
:-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 50; DB 1
Pred. No. 0.47;
3; Mismatches
                                                                                                                                                     Mismatches
to license@isb-sib.ch)
                                                                                                                            54;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 244-743 FROM N.A.
MEDLINE=92245758; PubMed=1574926;
Bolle P.-A., Gilliquet V., Berben G.
"The complete sequence of K3B, a 7.5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Transmembrane
                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             st 8:205-213(1992).
SIMILARITY: TO YEAST YEL016C
                                                                                                                                                      3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; X59720; CAA42318.1; -. PIR; S19437; S19437. PIR; S27380; S27380. SGD; S0000621; YCR026C. InterPro; IPR002591; -. Pfam; PF01663; Phosphodiest; 1 Hypothetical protein; Transmem TRANSMEM 114 135
                                                                                                                                                                                                                                                                                                                                                                            Ascomycota;
                                                                                       Æ¥,;
                                           InterPro; IPR002591; -. Pfam; PF01663; Phosphodiest; Hypothetical protein. SEQUENCE 493 AA; 57354 MW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Œ
                                                                                                                          71.1%;
69.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity 61.5%;
8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                 FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84915
                       AAB64493.1;
                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                             ъ.,
                                                                                                                                                                                                         130
                                     YEL016C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  222
                                                                                                                                                                               13
                                                                                                                                                                                                                                                                                                                                                                                                                                               Pohl F., Richterich |
Submitted (MAR-1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                            Richterich
                                                                                                                                         Similarity 9; Conserv
                                                                                                                                                                                              || | :||:||||
YMIPSFPTQTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                            Saccharomycetales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                 1-244
                                                                                                                                                                                                                                                                                                                                                                               Fungi;
email
                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=4932;
                      EMBL; U18530;
SGD; S0000742;
                                                                                                                                                                                                                                                                                                                                                                                                                                 OF
an
                                                                                                                                                                                                                                                                         YCR6_YEAST
P25353;
                                                                                                                                                                                                                                                                                                                                                                             Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                              Match
or send
                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     frames.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yeast
                                                                                                                              Query Ma
Best Loc
Matches
                                                                                                                                                                                 -
                                                                                                                                                                                                         118
                                                                                                                                                                                                                                                                                                                                                                                                                                               Pohl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      [2]
                                                                                                                                                                                                                                                             YCR6_Y
                                                                                                                                                                                                                                                 RESULT
CCC
CCC
DRR
DRR
SQ
                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                    AC
                                                                                                                                                                                                                                                                                                              T L
                                                                                                                                                                                                                                                                                                                                        DE
                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                         RL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RA KA KA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                          D
                                                                                                                                                                                                                                                                                                                                                                                                                                RP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RT
                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
```

SSULT 6

DT DT DT DE

```
"Complete sequence and model for the A2 subunit of the carotenoid pigment complex, crustacyanin.";

Eur. J. Biochem. 197:407-417(1991).

-!- FUNCTION: BINDS THE CAROTENOID ASTAXANTHIN WHICH PROVIDES THE COLORATION TO THE CARAPACE OF THE LOBSTER.

-!- SUBUNIT: OLIGOMER; CAN FORM DIMERS (BETA-CRUSTACYANIN); OR COMPLEXES OF 16 SUBUNITS (ALPHA-CRUSTACYANIN). THERE ARE FIVE TYPES OF SUBUNITS: A1, A2, A3, C1 AND C2.

-!- SUBCELLULAR LOCATION: EXTRACELLULAR, CARAPACE.
                                                                                                             icus (Clostridium thermohydrosulfuricum)
11 lus/Clostridium group;
Thermoanaerobacter.
                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a c between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                      CATALYTIC ACTIVITY: HYDROLYSIS OF TERMINAL, NON-REDUCING GALACTOSE RESIDUES IN BETA-D-GALACTOSIDES.
SIMILARITY: BELONGS TO FAMILY 2 OF GLYCOSYL HYDROLASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homarus gammarus (European lobster) (Homarus vulgaris).
Eukaryota; Metazoa; Arthropoda; Crustacea; Malacostraca;
Eumalacostraca; Eucarida; Decapoda; Pleocyemata; Astacidea;
Nephropoidea; Nephropidae; Homarus.
NCBI_TaxID=6707;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUCLEOPHILE (BY SIN FE011FF517E51DFC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                annotation update)
15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
BETA-GALACTOSIDASE (EC 3.2.1.23) (LACTASE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  174 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 11;
; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROTON DONOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; Y08557; CAA69850.1; -.
InterPro; IPR001649; -.
Pfam; PF00703; Glyco_hydro_2; 1.
PROSITE; PS00719; GLYCOSYL_HYDROL_F2_1;
PROSITE; PS00608; GLYCOSYL_HYDROL_F2_2;.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eliopoulos E.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAY-1991 (Rel. 18, Created)
01-MAY-1991 (Rel. 18, Last sequence
01-OCT-1994 (Rel. 30, Last annotation CRUSTACYANIN A2 SUBUNIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PubMed=2026162;
                                                                                                                      ethanolicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   85796 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5.3%;
3.8%;
ve
                                                                                                                                                                    group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                   39E;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservativ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Glycosidase.
388 388
453 453
743 AA; 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Caceres I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         വ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13
                                                                                                                                                                                                                                   STRAIN=ATCC 33223 / 3
Zverlov V.;
Submitted (FEB-1998)
                                                                                                                                               Bacteria; Firmicutes
Thermoanaerobacter g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
nes 7; Conser
                                                                                                                          Thermoanaerobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SECOENCE:
MEDLINE=91224133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J.N., Cacer
lay J.B.C.;
                                                                                                                                                                                               NCBI_TaxID=1757
[1]
                                                                                                   OR LACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CRA2_HOMGA P80007;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACT_SITE
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Findlay
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Keen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HOMGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ᆏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DATE DE LA PRESENTA DEL PRESENTA DE LA PRESENTA DEL PRESENTA DE LA PRESENTA DEL PRESENTA DE LA PRESENTA DEL PRESENTA DE LA PRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TO DEGRADE
                                                                                                                                                                                                     ->3)-BETA-GLUCAN (BETA-1,3-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OF 1, 3-BETA-D-GLUCOSIDIC LINKAGES
                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=CV. CLIPPER; TISSUE=Root, and Leaf;
MEDLINE=94307426; PubMed=8034043;
Xu P., Harvey A.J., Fincher G.B.;
"Heterologous expression of cDNAs encoding barley (Hordeum vulgare)
(1-->3)-beta-glucanase isoenzyme GV.";
FEBS Lett. 348:206-210(1994).
                                                                                                                                                                                                                                                                                               Spermatophyta; Triticeae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           endohydrolase-encoding gene family in barley, Hordeum vulgare.";
Gene 120:157-165(1992).

-!- FUNCTION: MAY PROVIDE A DEGREE OF PROTECTION AGAINST MICROBIAL INVASION OF GERMINATED BARLEY GRAIN THROUGH ITS ABILITY TO DEGREE OF PROTECTION AGAINST MICROBIAL FUNGAL CELL WALL POLYSACCHARIDES.

-!- CATALYTIC ACTIVITY: HYDROLYSIS OF 1,3-BETA-D-GLUCOSIDIC LINKAGIN 1,3-BETA-D-GLUCANS.

-!- SUBCELLULAR LOCATION: CYTOPLASMIC (PROBABLE).

-!- SIMILARITY: BELONGS TO FAMILY 17 OF GLYCOSYL HYDROLASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (1-->3)-beta-glucan
Hordeum vulgare.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MUCLEOPHILE (BY SIMILARITY).
PROTON DONOR (BY SIMILARITY)
OCCOAA9D48269B4F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                      Hordeum vulgare (Barley).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; S
Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in barley,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and Leaf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 44.5;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-CV. CLIPPER; TISSUE-ROOL, MEDLINE-93013030; PubMed-1398132 Xu P., Wang J., Fincher G.B.; "Evolution and differential expressions."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34413 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                58.6%;
ilarity 81.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; M96939; AAA21564.1; -. PIR; JC1438; JC1438.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 5-316 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Glycosidase;
239 239
296 296
316 AA; 3441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RPVYPTKTFPN 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |||| | |||||:
                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=4513;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JC1438; J; P15737;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   THEET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hydrolase;
                                                                                     E13E_HORVU
Q02438;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACT_SITE
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
```

0;

Gaps

ö

Indels

3;

Length

1;

DB

Y SIMILARITY).
SIMILARITY).
DFC CRC64;

(BY

BLUE

1

BGAL\_TE

1D AC

BGAL\_THEET

RESULT

307

a a

δŏ

Best Loc Matches

Query

Pfam;

HSSP;

P.F.,

Zagalsky

in no way commercial

in

. Usage by and for commercial http://www.isb-sib.ch/announce/

its

restrictions on

collaboration

BETA-D

Hordeum

000 OC OC OX OX OX

Ξ

outstation

10:41:09

24

Jul

5

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INTERACTION WITH ADAM17.

PubMed=10527948;

Nelson K.K., Schlondorff J., Blobel C.P.;

Nelson K.K., Schlondorff J., Blobel C.P.;

"Evidence for an interaction of the metalloprotease-disintegrin tumour necrosis factor alpha convertase (TACE) with mitotic arrest deficient conversion of the metalloprotease-disintegrin MDC9 with a novel MAD2-related protein, MAD2-beta.";

Biochem. J. 343:673-680(1999).
                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDC20 form
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleostomi
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      control
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ż
                                                                                                                                                                                                                                                                                                                                                                                01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
MITOTIC SPINDLE ASSEMBLY CHECKPOINT PROTEIN MAD2A (MAD2-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -Watanabe S., Kratzin H.D., Hilschmann to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Li Y., Benezra R.; "Identification of a human mitotic checkpoint gene: hsMAD2 Science 274:246-248(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lin Y., Yu H., Kirschner M.W
                                                                                                                                                                                                 Length 174
                                                                                                                                                                                                                            Ŋ
                                                                                                                                                                                                                          Indel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INTERACTION WITH CDC20.

MEDLINE-98301442; PubMed=9637688;
Fang G., Yu H., Kirschner M.W.;

"The checkpoint protein MAD2 and the mitotic regulator ternary complex with the anaphase-promoting complex to anaphase initiation.";
Genes Dev. 12:1871-1883(1998).
                                                                                                                                SIMILARITY.
SIMILARITY.
AC47FAA650C5E44E CRC64;
  TO THE LIPOCALIN FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the EMBL/GenBank/DDBJ
                                                                                                                                                                                                -
                                                                                                                                                                                                DB . 2;
                                                                                                                                                                                                                                                                                                                                            Æ
                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                           υ.
.
                                                                                                                                                                                               Score 40;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRUCTURE BY NMR OF 11-195.
MEDLINE-20165182; PubMed-10700282;
Luo X., Fang G., Coldiron M., Lin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PubMed=8824189
                                                                                                                                 BY
                                                             Pfam; PF00061; lipocalin; 1.
PRINTS; PR00179; LIPOCALIN.
PRINTS; PR01273; INVTBRTCOLOR.
PROSITE; PS00213; LIPOCALIN; 1.
Pigment; Lipocalin; Transport.
                                                                                                                                            ΒY
                                                                                                                                                                                                                        ô
                                                                                                                  Transport.
                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
NCBI_TaxID=9606;
                                                                                                                                                        19670 MW;
                                                                                                                                                                                               52.6%;
87.5%;
                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Jin D.-Y., Jeang K.-T.;
Submitted (JUL-1995) to
  BELONGS
                                                                                                                                             170
                                                                                                                                                                                                                                                                                                                                                                   (Rel. 40, (Rel. 40, (Rel. 40,
-!- SIMILARITY: BELONG
PIR; S15391; S15391.
InterPro; IPR000566;
InterPro; IPR002345;
InterPro; IPR003057;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Klebert S., Barnikol Submitted (OCT-1997)
                                                                                                                                                           Æ
                                                                                                                                                                                                           Local Similarity

les 7; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A MEDLINE=96421709;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EQUENCE FROM N.A
                                                                                                                                                                                                                                                                          87
                                                                                                                                             46
                                                                                                                                                        174
                                                                                                                                                                                                                                                                                                                                                                                                                       (HSMAD2).
MAD2L1 OR MAD2
                                                                                                                                                                                                                                                   VYPTKTFP
                                                                                                                                                                                                                                                                 |||||| || VYPTKEFP
                                                                                                                                                                                                                                                                                                                                        MD21_HUMAN
Q13257;
01-OCT-2000
01-OCT-2000
                                                                                                                                                                                               Query Match
Best Local S
Matches 7
                                                                                                                 Pigment;
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                 RESULT 9
                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                           80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6]
  d
                                                                                                                                                                                                                                                                                                                                                                               다
다
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RT
                                                                                                                                                                                                                                                   ð
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dobles M., Liberal V., Scott M.L., Benezra R., Sorger P.K.; "Chromosome missegregation and apoptosis in mice lacking the mitotic checkpoint protein Mad2."; Cell 101:635-645(2000).

-! FUNCTION: REQUIRED FOR THE EXECUTION OF THE MITOTIC CHECKPOINT WHICH MONITORS THE PROCESS OF KINETOCHORE-SPINDLE ATTACHMENT AND DELAYS THE ONSET OF ANAPHASE WHEN THIS PROCESS IS NOT COMPLETE. IT
             "Structure of the Mad2 spindle assembly checkpoint protein and its interaction with Cdc20.";
Nat. Struct. Biol. 7:224-229(2000).

-! FUNCTION: REQUIRED FOR THE EXECUTION OF THE MITOTIC CHECKPOINT WHICH MONITORS THE PROCESS OF KINETOCHORE-SPINDLE ATTACHMENT AND DELAYS THE ONSET OF ANAPHASE WHEN THIS PROCESS IS NOT COMPLETE. INHIBITS THE ACTIVITY OF THE ANAPHASE PROMOTING COMPLEX BY SEQUESTERING CDC20 UNTIL ALL CHROMOSOMES ARE ALIGNED AT THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MD21_MOUSE STANDARD; PRT; 205 AA.
Q9Z1B5; Q9J153;
01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
MITOTIC SPINDLE ASSEMBLY CHECKPOINT PROTEIN MAD2A (MAD2-LIKE 1)
    spindle assembly checkpoint protein and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 205;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                              (TACE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=C57BL/6J; TISSUE=Embryo;
Jin D.-Y., Jeang K.-T.;
"Identification of a novel component of the spindle assecheckpoint in mammalian cells.";
Submitted (JAN-1997) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein; 3D-structure.
B8DCBF0043836764 CRC64;
                                                                                                                                                                            ADAM17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ij
                                                                                                                                               SEQUESIENT:
METAPHASE PLATE.
SUBUNIT: INTERACTS WITH CDC20 AND WITH P
SUBCELLULAR LOCATION: NUCLEAR.
SIMILARITY: BELONGS TO THE MAD2 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 6.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                 use by non-profit institutions as lo modified and this statement is not remoentities requires a license agreement (or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 40;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nuclear F
23510 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                               į.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            52.6%;
54.5%;
                                                                                                                                                                                                                                                                                                                                                                                           U65410; AAC50781.1;
U31278; AAC52060.1;
                                                                                                                                                                                                                                                                                                                                                                                                                              ; AJ000186; CAA03943
601467; -.
1DUJ; 08-MAR-00.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR003511; -
Pfam; PF02301; HORMA;
Cell cycle; Mitosis; N
SEQUENCE 205 AA; 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR003511;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 YMRPVYPTKTF 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PubMed=10892650;
Dobles M., Liberal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | :||::||
YQRGIYPSETF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2L1 OR MAD2A.
musculus (Mo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN=129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MAD2L1
                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
MIM; (PDB;
                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
R R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DT
DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
```

ö

```
an email
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  822
                                                                                                                                           42
178
198
39
73
172
215
                                                                                               18
18
                                                                                                                                                                               3.7.1
2.1.3.46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPRO
Pfam; PF01443;
ATP-binding; H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JQ0096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Transferase
                                                                                                                                         ACT_SITE
ACT_SITE
ACT_SITE
DISULFID
DISULFID
DISULFID
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NP_BIND
SEQUENCE
                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                 RRPO_PMV
P20951;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PIR;
                                                                                                                                                                                                                                                                                                                                        227
                                                                                                                                                                                                                                                                                                                 ^{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SULT
                                                                                                                                                                                                                                                                                                                                                                                      RRPO_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 466666666666666
                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                          DT
DT
                                                                                                                                                                                                                                                                                                                                                                                                                                                DT
DE
DE
OS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RN
RX
RX
RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88
퍍
                                                                                                                                                       FT
FT
FT
FT
FT
                                                                                                                                                                                                                                                                                                                  ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ay
al
                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                               the European Divinitions as long as its concern in the statement is not removed. Usage by and for commercial modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      use by non-profit institutions as long as its content is in no w modified and this statement is not removed. Usage by and for commercient send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboratibetween the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Η
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lycopersicon esculentum (Tomato).

Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta

Magnoliophyta; eudicotyledons; core eudicots; Asteridae; euasterids

Solanales; Solanaceae; Solanum.

NCBI_TaxID=4081;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              temperature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.

STRAIN=CV. VENT CHERRY;
Schaffer M.A., Fischer R.L.;
Analysis of mRNAs that accumulate in response to low temperatidentifies a thiolprotease in tomato.";
Plant Physiol. 87:431-436(1988).
-!- INDUCTION: IN RESPONSE TO LOW TEMPERATURE.
-!- INDUCTION: IN RESPONSE TO LOW TEMPERATURE.
-!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY C1; ALSO KNOWN AS PAPAIN FAMILY OF THIOL PROTEASES.
                                                                                                                                                                                                                                                                                                                                         ö
INHIBITS THE ACTIVITY OF THE ANAPHASE PROMOTING COMPLEX SEQUESTERING CDC20 UNTIL ALL CHROMOSOMES ARE ALIGNED AT METAPHASE PLATE (BY SIMILARITY).
SUBUNIT: INTERACTS WITH CDC20.
SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).
SIMILARITY: BELONGS TO THE MAD2 FAMILY.
                                                                                                                                                                                                                                                                                                                 Length 205;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (EC
                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17, Created)
17, Last sequence update)
32, Last annotation update)
NDUCED CYSTEINE PROTEINASE PRECURSOR
                                                                                                                                                                                                                                                                           A9F3F28BC4C9738E CRC64;
                                                                                                                                                                                                                                            ;
;
                                                                                                                                                                                                                                            -> A (IN REF.
-> S (IN REF.
-> I (IN REF.
                                                                                                                                                                                                                                                                                                                    .;
—
                                                                                                                                                                                                                                                                                                                  ore 40; DB 1 ed. No. 6.2; Mismatches
                                                                                                                                                                                                                                                                                                                   Score 40;
Pred. No.
                                                                                                                                                                                                                               S; Nuclear protein.
157 T -> A (I
178 C -> S (I
201 T -> I (I
23598 MW; A9F3F28
                                                                                                                                                                               EMBL; U83902; AAD09238.1; -.
EMBL; AF261919; AAF69525.1; -
InterPro; IPR003511; -.
Pfam; PF02301; HORMA; 1.
Cell cycle; Mitosis; Nuclear
                                                                                                                                                                                                                                                                                                                  52.6%;
ilarity 54.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; M21444; AAA66308.1;
PIR; JA0159; JA0159.
HSSP; P00785; 2ACT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOW-TEMPERATURE-INDUCED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C01.029; -.
                                                                                                                                                                                                                                                                                                                                                                                         43
                                                                                                                                                                                                                                                                                                                                                                  1 YMRPVYPTKTF 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYSL_LYCES STAN
P20721;
01-FEB-1991 (Rel. 1
01-FEB-1991 (Rel. 1
01-NOV-1995 (Rel. 3
                                                                                                                                                                                                                                                                                                                               Best_Local Similarity
Matches 6; Conser
                                                                                                                                                                                                                                                                               205 AA;
                                                                                                                                                                                                                                                                                                                                                                             | | :||::||
YQRGIYPSETF
                                                                                                                                                                                                                                            157
178
201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                        CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                             CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEROPS;
                                                                                                                                                                                                                                                                                                                                                                                         33
                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
CYSL_L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TO
TO
   ZX
XX
                                                                                                                                                                                                                                                                                                                                                                   Qγ
```

```
ó:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          маγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          polymeras
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Potexvirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OF THIS PROTEIN
                                                                                                                                                                                                                                                                                          (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                  LOW-TEMPERATURE-INDUCED CYSTEINE PROTEINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          [CONTAINS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
RNA REPLICATION PROTEIN (176 KDA PROTEIN) (ORF 1) [CONTAIDIRECTED RNA POLYMERASE (EC 2.7.7.48); PROBABLE HELICASE]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sel; 1.
replication; RNA-directed RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ø
                                                                                                                                                                                                                                                                                                                                                     34
                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64
                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    stage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL).
6CA4282C6A082622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sit T.L., Abouhaidar M.G., HOLY S.,
"Nucleotide sequence of papaya mosaic virus RNA."
J. Gen. Virol. 70:2325-2331(1989).
-!- FUNCTION: RNA-REPLICATION. THE CENTRAL PART OF POSSIBLY FUNCTIONS AS A ATP-BINDING HELICASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ä
                                                                                                                                                                                                                                                                                                                                                                                    4;
                                                                                                                              Glycoprotein
                                                                                                                 FALSE_NEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ϊ;
                                                                                                                                                                                                                                                                                                                                                     ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 52.
                                                                                                                                                                                                    SIMILARITY.
SIMILARITY.
SIMILARITY.
SIMILARITY.
SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                   ed. No. 11; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                        DB
interPro; IPR000169; -.
InterPro; IPR000668; -.
Pfam; PF00112; Peptidase_C1; 1.
Pfam; PF00396; granulin; 1.
PROSITE; PS00139; THIOL_PROTEASE_CYS; 1.
PROSITE; PS00640; THIOL_PROTEASE_HIS; 1.
PROSITE; PS00640; THIOL_PROTEASE_ASN; FALSHydrolase; Thiol protease; Zymogen; Glycopnon_TER
NON_TER
1 1 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       requires a license agreement (no email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     viruses,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 40;
Pred. No.
                                                                                                                                                                                                                                                                                             I-LINKED
D42AC73
                                                                                                                                                                                                                                                                                                                                                       40
                                                                                                                                                                                                                                                                                                                                                        core
                                                                                                                                                                                                                                                                                                                                                        Scor(
Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATP
MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed=2778435
                                                                                                                                                                                                                                   BY
BY
BY
BY
                                                                                                                                                                                                      BY
BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Papaya mosaic potexvirus (PMV)
Viruses; ssRNA positive-strand
NCBI_TaxID=12181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            helicasel
                                                                                                                                                                                                                                                                                                             XX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52.6%;
ilarity 87.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     176320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RNA
                                                                                                                                                                                                                                                                                                                                                        ....
                                                                                                                                                                                                                                                                                                                                                       99 96
98 96
                                                                                                                                                                                                                                                                                                           429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; D13957; BAA03050.1;
                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                        52
58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Helicase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         829
                                                                                                                                                                                                                                                              114
223
215
374
                                                                                                                                                                                                       42
178
198
81
                                                                                                                                                                          346
                                                                                                                                                                                                                                                                                                                                                                                                                                            238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Viral
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PR000606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JQ0096
                                                                                                                                                                                                                                                                                                                                                                  Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. MEDLINE-89381685;
                                                                                                                                                                                                                                                                                                                                                                                                                MRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                             IEPSYPVKTGPN
                                                                                                                                                                                                                                                                                                              AA
```

69-

831

 $\infty$ 

マ

g

0

S

```
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 15
KIN1_YEAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ന
                                                                        σ
                                Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                         a
                                                                                                                          g
                                                         ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation. the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                  Н
                                                                                                                                                                                           STRAIN-CV. KENNEBEC; TISSUE-Tuber;
MEDLINE-97201488; PubMed-9049274;
Korth K.L., Stermer B.A., Bhattacharyya M.K., Dixon R.A.;
"HMG-CoA reductase gene families that differentially accumulate
transcripts in potato tubers are developmentally expressed in floral
                                                                                                                                            ermatophyta;
; euasterids
                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                        BIOSYNTHESI
                                                                                                                                                                                                                                                       SPECIFIC
                                                                                                                                                                                                                                                                                       ISOPRENOID BIOSYNTHE PROTEIN. ENDOPLASMIC
                                                                                                                                                                                                                                                                                                               TISSUE SPECIFICITY: EXPRESSED IN YOUNG FLOWERS AND IN MATURE SEPALS AND OVARIES.
SIMILARITY: BELONGS TO THE HMG-COA REDUCTASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL)
                                                                                                                                                                                                                                       FUNCTION: CATALYZES THE SYNTHESIS OF MEVALONATE. THE SPEPUNCTION: CATALYZES THE SYNTHESIS OF MEVALONATE. THE SPEPUNCTION: CATALYZES THE SYNTHESIS OF MEVALONATE. THE SPEPUL ISOPRENOID COMPOUNDS PRESENT IN PLANTS. CATALYTIC ACTIVITY: (R)-MEVALONATE + COA + 2 NADPH. PATHWAY: MEVALONATE BIOSYNTHESIS, PLANT ISOPRENOID BIOSYSUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN. ENDOPLARETICULUM.
                                                                                                                           solanum tuberosum (Potato).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spa
Magnoliophyta; eudicotyledons; core eudicots; Asteridae
Solanales; Solanaceae; Solanum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ~~~~
                                                                                                         ~
                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                               01-OCT-2000 (Rel. 40, Created)
01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation updat
3-HYDROXY-3-METHYLGLUTARYL-COENZYME A REDUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HMG2
                                                                                                                                                                                    ROM N.A.
KENNEBEC;
                       416
                                                                                                                 5
      13
                                                                                                                                                                   _TaxID=4113;
                                                                                                                REDUCTASE
                SEQUENCE FROM
                                                              HMD2_SOLTU
Q41437;
                                                                                                                                                                                                                                      tissues.";
Plant Mol.
                                               SOLTU
                      409
                                                                                                                         HMG2
                                                                                                                                                                   NCBI
      9
                                                                                                                  COA
                                                                                                                                                                                                                                                                                                               SULT
                                                       HMD2_
                                                                         d
       Qγ
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>;</u>
                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               early
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Saccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN=NIES-296;
MEDLINE=20150907; PubMed=10688199;
Lemieux C., Otis C., Turmel M.;
Lemieux C., Otis C., Turmel M.;
"Ancestral chloroplast genome in Mesostigma viride reveals an "Ancestral chloroplast genome in Mesostigma viride reveals and "Ancestral chloroplast genome in Mesos "Ancestral chloroplast genome "
                                                                                                         595;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 890;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS00674; AAA; 1.
Chloroplast; Hypothetical protein.
SEQUENCE 890 AA; 103935 MW; 43CAEEE991AF2C4B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Prasinophyceae;
OFA7069849D41D57 CRC64;
                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KIN1_YEAST STANDAKD;

KIN1_YEAST STANDAKD;

P13185; Q04606;

01-JAN-1990 (Rel. 13, Created)

01-JAN-1997 (Rel. 35, Last sequence update)

30-MAY-2000 (Rel. 39, Last annotation update)

PROTEIN KINASE KIN1 (EC 2.7.1.-).

KIN1 OR YDR122W OR YD9727.17.

Saccharomyces cerevisiae (Baker's yeast).

Succharomyces cerevisiae (Baker's yeast).

Eukaryota; Fungi; Ascomycota; Saccharomycotina; Sac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3
                                                                                                                                                                                   ï
                                                                                                             1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-2000 (Rel. 40, Created)
01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
HYPOTHETICAL 103.9 KDA PROTEIN YCF2 (RF2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Viridiplantae; Chlorophyta; Prasinchlorodendrales; Mesostigmataceae; Mesostigma NCBI_TaxID=41882; [1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         890 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 39; DB Pred. No. 43; 0; Mismatches
                                                                                                   DB
28;
                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pancestral Community branch of green plant evolution. ,
Nature 403:649-652(2000).
-!- SIMILARITY: BELONGS THE YCF2 FAMILY.
                                                                                                     Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
   63841 MW;
                                                                                                         51.3%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51.3%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAF43852.1;
                                                                                                                                                Similarity 66.76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 70.7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001081;
InterPro; IPR001939;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PF00004; AAA;
   AA;
                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 viride
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         650 RPVYSVKLFP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AF166114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RPVYPTKTFP
   595
                                                                                                                                                                                                                                                     3 RPVYPTKTF
                                                                                                                                                                                                                                                                                            :||||:| |
KPVYPSKVF
                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
YCF2_MESVI
ID YCF2_MESVI
AC Q9MUP8;
DT 01-OCT-2000 (
DT 01-OCT-2000 (
DT 01-OCT-2000 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mesostigma v
Chloroplast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 7
                                                                                                             Query Match
                                                                                                                                                  Local
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OF PROTEIN KINASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; M69017; AAA34722.1; -
EMBL; M69017; AAA34722.1; -
PIR; S42438; S42438.
HSSP, Q63450; 1A06.
SGD; S0002529; KIN1.
InterPro; IPR000290; -.
PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
PROSITE; PS00107; PROTEIN_KINASE_ST; 1.
PROSITE; PS0011; PROTEIN_KINASE_DOM; 1.
TRANSferase; Serine/threonine-protein kinase; ATP-binding.
DOMAIN 120 398 PROTEIN KINASE.
NP_BIND 126 149 ATP (BY SIMILARITY).
BINDING 149 149 ATP (BY SIMILARITY).
CONFLICT 25 25 S -> R (IN REF. 1).
CONFLICT 453 453 T -> H (IN REF. 1).
CONFLICT 970 921 NI -> IN (IN REF. 1).
CONFLICT 976 976 T -> A (IN REF. 1).
CONFLICT 978 980 SI -> T (IN REF. 1).
CONFLICT 979 980 SI -> T (IN REF. 1).
CONFLICT 979 980 SI -> T (IN REF. 1).
SEQUENCE 1064 AA; 120070 WW; E4104B84ABE45C36 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                M.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1064;
                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
STRAIN=S288C / AB972;
Murphy L., Shore L., Harris D., Barrell B.G., Rajandream Mush S.V.;
Walsh S.V.;
Submitted (MAR-1995) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: THIS PROTEIN IS PROBABLY A SERINE/THREONINE
                                                                                                                                                                                                                ₽.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                     SEQUENCE FROM N.A.
MEDLINE=87317589; PubMed=2957690;
Levin D.E., Hammond C.I., Ralston R.O., Bishop J.M.;
"Two yeast genes that encode unusual protein kinases.
Proc. Natl. Acad. Sci. U.S.A. 84:6035-6039(1987).
       Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SER/THR FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 39; DB Pred. No. 52; 2; Mismatches
         Saccharomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              51.3%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KINASE.
SIMILARITY: BELONGS
NIM1 SUBFAMILY.
     Saccharomycetales;
NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 6; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <del>-</del>
THE TENT AND DEPARTMENT OF COCCOCCOCCE AND DEPARTMENT OF THE TENT OF THE TENT
```

2001, 14:47:09 July 19, completed: me: 171 sec Search Job tim

813

||||| |: :| YMRPPMPSSAYP

802

d

Gaps

ó;

Indels

4

Conservative

YMRPVYPTKTFP

δ

-831-69

 $\mathbf{c}$ 48

60-sn

-

```
4.5
Compugen Ltd.
version - 2000
GenCore
(c) 1993
       Copyright
```

using sw model protein search, OM protein

Search time 42.51 Seconds (without alignments) 40.460 Million cell updates/sec 14:46:48 2001, July 19, Run on:

US-09-483-831-69\_COPY\_201 76

YMRPVYPTKTFPN 13 score: Sequence: Title: Perfect

BLOSUM62 Gapop 10.0 Scoring table:

0.5

Gapext

residues 132305027 425026 seqs, Searched:

425026 hits satisfying chosen parameters: of Total number

2000000000 length: length: sed sed DB DB Minimum Maximum

Post-processing:

summaries Minimum Match 0% Maximum Match 100% Listing first 45 s

Database

sp\_unclassified:\*
sp\_vertebrate:\* sp\_archea:\*
sp\_bacteria:\*
sp\_fungi:\*
sp\_human:\*
sp\_invertebrate:\*
sp\_mammal:\*
sp\_mhc:\*
sp\_organelle:\*
sp\_phage:\* sp\_plant:\* sp\_rodent:\* sp\_virus SPTREMBL\_16 

No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, derived by analysis of the total score distribution. . No. score gand is Pred

## SUMMARIES

					SUMMAKIES	
Result		% Ouerv	•			•
No.	Score	Match	Length	DB	ID	cription
 	26	00.	9	11	Q9R1E6	Q9rle6 mus musculu
7	16	00	9	4	013822	82
ന	92	0	9	4	015117	15117 homo
4	97	00	$\vdash$	サ	013827	
ស	70	ς.	$\infty$	11	Q64610	Q64610 ratt
9	69	0	ហ	11	088827	088827 rattus norv
7	69	。	4	4	Q9NPZ3	Q9npz3 homo sapien
æ	69	0	$\mathbf{C}$	4	Q9P1P6	plp6 homo
6	68	<u>ი</u>	~	11	P97675	97675 ratt
	68	<u>ა</u>	~	11	P70641	P70641 rattus norv
11	65	85.5	875	4	014638	014638 homo sapien
	65	ς.	~	11	063490	Q63490 rattus norv
	65	N	~	11	P97676	P97676 rattus norv
	64	4		ဖ	Q9TRD2	Q9trd2 bos taurus
	64	4.	7	14	090761	Н
	64	4	$\vdash$	14	Q9J5H1	09j5hl fowlpox vir
	49	4		10	Q9SU82	2 arabidops
	49	4.	9	10	Q9SU81	Q9su81 arabidopsis
	49	4.	2	Ŋ	P90754	P90754 caenorhabdi

fs13 spinacisu83 arabido 2974 oryza s 755 caenorha 5a0 homo sap wyc8 mus mus wyc8 mus mus 013 zymomona 3423 dianthu ab9 xylella 6x5 homo sap 2499 zea may 248 caenorha 9935 xenopus	9812) arabidopsi 9M4f6 brassica n 1478 dreissena p nb54 dreissena p 49877 lycopersic 89920 oat blue d v5n8 drosophila y0e8 drosophila
09FS13 09SU83 042974 P90755 09Y5A0 09HAC9 09HAC9 09HAC9 044145 09V3H9 043423 09XV4 09Z248 09Z248	Q9M4F Q9M4F Q9NB54 Q9NB54 Q9W5N8 Q9V5N8
0110046412000124101	14 0 0 4 0 0 0 4 0 0
1004 1004 1004 1004 1004 1003 1003 1003	00000L0
00000000000000000000000000000000000000	10000000
<b>444444444444</b> 444444444444444444444444	
22222222222 04224297898888888 0426429789012645978	

# ALIGNMENTS

```
Gaps
                                                                                                                Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
NCBI_TaxID=10090;
                                                                                                                                                                                      SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
STRAIN=C57B/6;
Sano K., Piao J.-H.;
"Cloning and chromosomal assignment of mouse phosphodiesterase [Cloning and chromosphatase (PD-I alpha/autotaxin).";
I/nucleotide pyrophosphatase (PD-I alpha/autotaxin).";
Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF123542; AAD46480.1; -.
InterPro; IPR001212; -.
InterPro; IPR002591; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                           862;
                                                                                           3.1.4.1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                   641F8F1443E4F8B0 CRC64;
                      O9R1E6,
O9R1E6;
O1-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAY-2001 (TrEMBLrel. 16, Last annotation update)
PHOSPHODIESTERASE I/NUCLEOTIDE PYROPHOSPHATASE (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 11;
5.7e-05;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 76; DB
Pred. No. 5.7
; Mismatches
                                                                                                                                                                                                                                                                                                                                                            ~
                                                                                                                                                                                                                                                                                                               Pfam; PF01033; Somatomedin_B; 2. Pfam; PF01663; Phosphodiest; 1. PRINTS; PR00022; SOMATOMEDINB. PROSITE; PS00524; SOMATOMEDIN_B; SMART; SM00201; SO; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
0
                                                                                                                                                                                                                                                                                                                                                                                                   98918 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13
                                                                                                                                                                                                                                                                                                                                                                                                    AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity 13; Conser
                                                                                                                                                                                                                                                                                                                                                                    SMART; SM00201; Hydrolase.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Match
                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
Matches 1
RESULT
Q9R1E6
```

212 YMRPVYPTKTFPN YMRPVYPTKTFPN \_ 200 g ð

ö

~ RESULT

ö

ö

.rspt

013822

[]

RY RX

RA RT RT

RN

RP

 $\mathbb{R}$ 

DR DR DR

2008 N 000 N N 000 N 000

DI DE

GN

```
rvegicus (кас).
; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                  Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          915;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ø
                                                                                                                                                                       Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2BE6135CCD837780 CRC64;
                                                                                                                                                                       Indel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Murata J., Lee H.Y., Clair T., Krutzsch H.C., Arestad Sobel M.E., Liotta L.A., Stracke M.L.; "cDNA cloning of the human tumor motility-stimulating autotaxin, reveals a homology with phosphodiesterases. J. Biol. Chem. 269:30479-30484(1994).

EMBL, L35594; AAA64785.1; -.
InterPro; IPR001212; -.
InterPro; IPR001604; -.
InterPro; IPR002591; -.
                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Hammalia; Eutheria; Primates; Catarrhini; Hominidae; NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                            update)
on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
6.1e-05;
                                                                                                 318EA28B1CEA7A55
                                                                                                                                         core 76; DB 4;
red. No. 5.7e-05
Mismatches 0
                                                                                                                                                                                                                                                                                                                                             sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  885 AA
                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>⊗</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                            Score
Pred.
                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF01033; Somatomedin_B; 2.
Pfam; PF01663; Phosphodiest; 1.
PRINTS; PR00022; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDIN_B; 2
SMART; SM00477; NUC; 1.
SEQUENCE 915 AA; 105246 MW; 2E
                                                                       2
InterPro; IPR001604; -.
InterPro; IPR002591; -.
Pfam; PF01033; Somatomedin_B; 2.
Pfam; PF01663; Phosphodiest; 1.
PRINTS; PR00022; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDIN_B; 2
SMART; SM00477; NUC; 1.
SEQUENCE 863 AA; 99040 MW; 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed=7982964;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01, Creat
01, Last
16, Last
3.1.4.1)
                                                                                                                                                                                                                                                                                                                                              Last
                                                                                                                                                                                                                                                                                                                                                         Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .;
0
                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                         Similarity 100.08;
13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                              01
01
16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q64610
Q64610;
Q64610;
Q1-NOV-1996 (TrEMBLrel. 0
Q1-NOV-1996 (TrEMBLrel. 0
Q1-MAR-2001 (TrEMBLrel. 1
PHOSPHODIESTERASE I (EC 3
NPH-TYPE III.
Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chord
Mammalia; Eutheria; Roden
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                             (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                               213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13
                                                                                                                                                                                                     Η
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 13; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE=TUMOR;
MEDLINE=95074054;
                                                                                                                                                                                                                                                                                                 Q13827
Q13827;
Q1-NOV-1996
Q1-NOV-1996
Q1-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                         AUTOTAXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Mar.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Match
                                                                                                                                               Query Match
                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               201
                                                                                                                                                           Best Loc
Matches
                                                                                                                                                                                                      Н
                                                                                                                                                                                                                               201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       064610
                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                      3827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RA
RT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DR
DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DR DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DR
DR
DR
DR
SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               요
                                                                                                                                                                                                                                                                                                                                             RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                      П
                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                       autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of the human brain-type gene (PDNP2).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Euteleostomi;
                                                                                                                                  Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nishimura N., Narita M., Inazawa
                                                                                                                                                                                                                                                           protein,
                                                                                                                                                                                                                                                                                                                              TISSUE-TESTIS;
MEDLINE=96158950; PubMed=8579579;
Lee H.Y., Murata J., Clair T., Polymeropoulos M.H., Torres R., Manrow R.E., Liotta L.A., Stracke M.L.;
"Cloning, chromosomal localization, and tissue expression of a from human teratocarcinoma cells.";
Biochem. Biophys. Res. Commun. 218:714-719(1996).
EMBL; L46720; AAB00855.1; -.
InterPro; IPR001212; -.
InterPro; IPR001604; -.
InterPro; IPR002591; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                  Arestad A.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                               MEDLINE=95074054; PubMed=7982964; Murata J., Lee H.Y., Clair T., Krutzsch H.C., Arestad Sobel M.E., Liotta L.A., Stracke M.L.; "cDNA cloning of the human tumor motility-stimulating autotaxin, reveals a homology with phosphodiesterases J. Biol. Chem. 269:30479-30484(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F960DCE51663BABC CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                  Vertebrata; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last sequence update)
Last annotation update)
                                              Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    core 76; DB 4;
red. No. 5.7e-05;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=96163899; PubMed=8586446;
Kawagoe H., Soma O., Goji J., Nishimura N., Nar
Nakamura H., Sano K.;
"Molecular cloning and chromosomal assignment c
phosphodiesterase I/nucleotide pyrophosphatase
Genomics 30:380-384(1995).
EMBL; D45421; BAA08260.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              863 AA.
                                                                                                                                  Craniata; V.
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF01033; Somatomedin_B; 2.
Pfam; PF01663; Phosphodiest; 1.
PRINTS; PR00022; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDIN_B;
SMART; SM00477; NUC; 1.
SEQUENCE 863 AA; 99017 MW; F9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOMATOMEDIN_B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                     Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        015117;
01-NOV-1996 (TrEMBLrel. 01,
01-NOV-1996 (TrEMBLrel. 01,
01-MAR-2001 (TrEMBLrel. 16,
PHOSPHODIESTERASE I ALPHA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                01,
01,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                     PRELIMINARY;
                                                             TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         213
                                                                          (TrEMBLrel
                                                 (TremBLrel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N.A.
                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                         SEQUENCE FROM N.A.
TISSUE=TESTIS;
MEDLINE=95074054;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FROM N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                  Q13822;
Q13822;
Q1-NOV-1996
Q1-NOV-1996
Q1-MAR-2001
AUTOTAXIN-T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201
```

ö

Gaps

ö

RESULT

g

Q

511

RA RT

 $\mathbb{R}^{\Gamma}$ 

AC OCC OCC OCC OX RA RA RA RA

.rspt

ß

21

Euteleostomi

Ношо

databases

3

```
01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
DJ131F15.2 (PHOSPHODIESTERASE I/NUCLEOTIDE PYROPHOSPHATASE (HOMOLOGOUS TO MOUSE LY-41 ANTIGEN) (PC1, NPPS)) (FRAGMENT)
                                                                                                                                         Vertebrata;
L; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Vertebrata;
l; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                              Peck A.;
Submitted (JUL-2000) to the EMBL/GenBank/DDBJ da'
EMBL; AL117378; CAB99365.1; -.
InterPro; IPR001212; -.
InterPro; IPR001604; -.
InterPro; IPR002591; -.
Pfam; PF01033; Somatomedin_B; 2.
Pfam; PF0163; Phosphodiest; 1.
PRINTS; PR00022; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDIN_B; 2.
SMART; SM00477; NUC; 1.
NON_TER 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         re 69; DB 4; Loged. No. 0.00092; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C2DD58248BDAC52E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Trischitta E.;
the EMBL/GenBank/DDBJ
                                                                                                                                         Craniata; Ve
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; V
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 69;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOINED.
JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; C
Mammalia; Eutheria; Primates; C
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ő
                                                                                                                     Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
NCBI_TaxID=9606;
[1]
SEQUENCE FROM N.A.
                                                                                                                                             ....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96844 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.

Bozzali M., Pizzuti A., Tris
Submitted (DEC-1998) to the
EMBL; AF110280; AAF36094.1;
EMBL; AF110281; AAF36094.1;
EMBL; AF110283; AAF36094.1;
EMBL; AF110284; AAF36094.1;
EMBL; AF110285; AAF36094.1;
EMBL; AF110286; AAF36094.1;
EMBL; AF110289; AAF36094.1;
EMBL; AF110299; AAF36094.1;
EMBL; AF110291; AAF36094.1;
EMBL; AF110291; AAF36094.1;
EMBL; AF110295; AAF36094.1;
EMBL; AF110295; AAF36094.1;
EMBL; AF110295; AAF36094.1;
EMBL; AF110296; AAF36094.1;
EMBL; AF110296; AAF36094.1;
EMBL; AF110299; AAF36094.1;
EMBL; AF110299; AAF36094.1;
EMBL; AF110299; AAF36094.1;
EMBL; AF110299; AAF36094.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          90.8%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity 100 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9P1P6
Q9P1P6;
01-OCT-2000
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                              NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \boldsymbol{\omega}
                                                                                                      PDNP1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
19P1P6
          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       П
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DTT COCCOS OCT OCT DTT COCCOS OCT DTT COCCOS OCT DT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DR
DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DR
DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                      brain-specific alpha) from rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sakoda H., Asano T., Ogihara T.; "N terminal of the plasma cell membrane glycoprotein PC-1." Submitted (SEP-1998) to the EMBL/GenBank/DDBJ databases.
EMBL; AB017596; BAA33393.1; -.
InterPro; IPR001212; -.
Pfam; PF01033; Somatomedin_B; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 885;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indel
                                                                                                                                                                                                                                                                                                                                                                                        8C5C0AFC52007973 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                         SEQUENCE FROM N.A.
STRAIN=SPRAGUE-DAWLEY; TISSUE-BRAIN;
MEDLINE=95050605; PubMed=7961762;
Narita M., Goji J., Nakamura H., Sano K.;
"Molecular cloning, expression, and localization of a phosphodiesterase I/nucleotide pyrophosphatase (PD-I abrain.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CF348E474FBDAFED CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (TrEMBLrel. 08, Created)
(TrEMBLrel. 08, Last sequence update)
(TrEMBLrel. 16, Last annotation update)
MEMBRANE GLYCOPROTEIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ore 69; DB 11; L
red. No. 0.00026;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                          ore 70; DB 11;
ed. No. 0.00065;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           257
                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 70;
Pred. No. (
                                                                                                                                                          J. Biol, Chem. 269:28235-28242(1994).

EMBL; D28560; BAA05910.1; -.

InterPro; IPR001212; -.

InterPro; IPR001604; -.

InterPro; IPR002591; -.

Pfam; PF01033; Somatomedin_B; 2.

Pfam; PF01663; Phosphodiest; 1.

PRINTS; PR00022; SOMATOMEDINB.

PROSITE; PS00524; SOMATOMEDIN_B; 2.

SMART; SM00477; NUC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 69;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRINTS; PRO0022; SOMATOMEDINB.
PROSITE; PS00524; SOMATOMEDINB.
SMART; SM00201; SO; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                        101309 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rattus norvegicus (Rat).

Eukaryota; Metazoa; Chordata;

Mammalia; Eutheria; Rodentia;

NCBI_TaxID=10116;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28306 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90.8%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                              92.1%;
ilarity 92.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 MRPVYPTKTFPN 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SM00201; SO;
R 257
CE 257 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                            AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity 12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10116;
[1]
                                                                                                                                                                                                                                                                                                                                                                                        885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            O88827;
01-NOV-1998
01-NOV-1998
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CELL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
```

PLASMA

검검

AC

088827

9

RESULT 088827

Best Loc Matches

-

δ

198

d

09NPZ3 09NPZ3

AC AC

RESULT Q9NPZ3

230

g

ð

ö

Gap

; 0

Ø

Indel

845

Length

CRC64

Euteleostomi;

Homo

databases

rspt

ж. •

21

```
cloning
                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                            N.A
                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9606;
[1]
                                            FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Waterston R.
Submitted (J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q.
                                                             Sano K.;
"Molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Waterston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                            SEQUENCE
                                                                                                                                                                                             Query Match
                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                         11
                                                                                                                                                                                                                                                                                                                                                     PDNP3
                                                                                                                                                                                                                                Н
                                                                                                                                                                                                                                              197
                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               [4]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                                                                                                                                                                        RESULT
014638
                                                                                                                                                                                                      Best
                                                                                                                                                                                                                                                                                                                           DT
DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                         RI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RA
RT
RL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RA RY RY RY RY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RA
RL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RN
RP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RA
  d
                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                             RN
                                                                                                                                                                                                                                                                                                                    텀
                                                                                                                                                                                                                                                                                                                                                     GN
                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                           텀
                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                      basolateral
                                                                                                                                                                                                                                                                                                                                                             of
                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                             Goding J.W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ф
                                                                                                                                                                                                                                                                                                                                                             forms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            87
                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                           "Biochemical and molecular identification of distinct for alkaline phosphodiesterase I expressed on the apical and plasma membrane surfaces of rat hepatocytes."; Hepatology 25:995-1002(1997).

EMBL; U78787; AAB61535.1; -.

InterPro; IPR001212; -.

InterPro; IPR001604; -.

InterPro; IPR002591; -.

Pfam; PF01033; Somatomedin_B; 2.

Pfam; PF01663; Phosphodiest; 1.

PROSITE; PS00524; SOMATOMEDIN_B; UNKNOWN_2.
                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                          92
                                                                                                                                           Indel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                CRC64
                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                          STRAIN=SPRAGUE-DAWLEY;
MEDLINE=97250927; PubMed=9096610;
Scott L.J., Delautier D., Meerson N.R., Trugnan G.,
Maurice M.;
                                                                                                                                                                                                                                       Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
Last annotation update)
                                                                                                OECAA063801CAFEB
                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8FEB9A482173D377
                                                                                                                                0.001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 68; DB 11
Pred. No. 0.0014
; Mismatches
                                                                                                                          4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Æ
                                                                                                                          DB
                                                                                                                                 Pred. No. 0. Mismatches
                                                                                                                                                                                                                       875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         876
                                                                                                                          Score 69;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
 JOINED.
JOINED.
JOINED.
                                                                                                                                                                                                                       PRT;
EMBL; AF110301; AAF36094.1; JOINED EMBL; AF110302; AAF36094.1; JOINED EMBL; AF110303; AAF36094.1; JOINED InterPro; IPR001212; -. InterPro; IPR001504; -. InterPro; IPR002591; -. Pfam; PF01033; Somatomedin_B; 2. Pfam; PF01663; Phosphodiest; 1. PROSITE; PS00524; SOMATOMEDIN_B; 2. SMART; SM00477; NUC; 1. SEQUENCE 925 AA; 104924 MW; OE
                                                                              7
                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MM;
                                                                                                                                                                                                                    P97675 PRELIMINARY;
P97675;
01-MAY-1997 (TrEMBLrel. 03, C
01-MAY-1997 (TrEMBLrel. 03, L
01-MAR-2001 (TrEMBLrel. 16, L
ALKALINE PHOSPHODIESTERASE.
Rattus norvegicus (Rat).
                                                                                                                          90.8%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            89.5%;
92.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02,
02,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P70641;
P70641;
01-FEB-1997 (TrEMBLrel. C
01-FEB-1997 (TrEMBLrel. C
01-MAR-2001 (TrEMBLrel. I
PHOSPHODIESTERASE I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              209
                                                                                                                                                                            259
                                                                                                                                                                                                                                                                                                                                                                                                                                                         SMART; SM00477; NUC; SEQUENCE 875 AA;
                                                                                                                                                            13
                                                                                                                                 l Similarity
12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      197 YMRAVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 12; Conser
                                                                                                                                                            MRPVYPTKTFPN
                                                                                                                                                                     SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ouery Match
Best Local S
Matches 12
                                                                                                                          Query Match
                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10
                                                                                                                                                                                                      σ
                                                                                                                                 Best Loc
Matches
                                                                                                                                                            ~
                                                                                                                                                                             248
                                                                                                                                                                                                      RESULT
P97675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P70641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                             d
                                                                                                                                                                                                                       a
I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                            δ
```

```
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                               Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (PDNP3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Euteleostomi;
                                                Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.1.4.1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ÷
                                                                 Murinae;
                                                                                                                                                                            small
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PD-Ibeta
                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HOMO
                                                                                                                                                                                                                                                                                                                                                                                                                                              87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                          PROXIMAL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>က</u>
                                                                                                                                                                               rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 OF 189-875 FROM N.A.
Wohldmann P., Le T.;
quence of Homo sapiens PAC clone DJ0988G15.";
ed (SEP-1998) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       databases
                                                                                                                                                                                                                   databases
                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                databas
                                                                                                                                                                                                                                                                                                                                                                                       CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; 1
Catarrhini; Hominidae;
                                                               Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           014638
014638;
01-JAN-1998 (Tremblrel. 05, Created)
01-JAN-1998 (Tremblrel. 05, Last sequence update)
01-JAN-2001 (Tremblrel. 16, Last annotation update)
PHOSPHODIESTERASE I/NUCLEOTIDE PYROPHOSPHATASE BETA
                                                                                                                                                                               from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE=PROSTATE;
MEDLINE=98008933; PubMed=9344668;
Piao J.-H., Goding J.W., Nakamura H., Sano K.;
"Molecular cloning and chromosomal localization of new member of the human phosphodiesterase I genes."
Genomics 45:412-415(1997).
[2]
SEQUENCE OF 189-875 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
                                                                                                                                                                                                                                                                                                                                                                                      D2F772C34A0C437A
                                                                                                                                                                                                                                                                                                                                                                                                                                          ore 68; DB 11;
ed. No. 0.0014;
Mismatches 1
                                                                                                                                                                             CDNA
                                                                                                                                          STRAIN-SPRAGUE-DAWLEY; TISSUE-SMALL INTESTINE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (JAN-1999) to the EMBL/GenBank/DDBJ
EMBL; AF005632; AAC51813.1; -.
EMBL; AC005587; AAD05192.1; -.
InterPro; IPR001212; -.
                                                                                                                                                                                        intestine.";
Submitted (MAY-1994) to the EMBL/GenBank/DDBJ EMBL; D30649; BAA06333.1; -.
InterPro; IPR001212; -.
InterPro; IPR001504; -.
InterPro; IPR002591; -.
Pfam; PF01033; Somatomedin_B; 2.
Pfam; PF01663; Phosphodiest; 1.
PROSITE; PS00524; SOMATOMEDIN_B; UNKNOWN_2.
SMART; SM00477; NUC; 1.
SEQUENCE 876 AA; 99328 MW; D2F772C34A0C437
                                                                                                                                                                                                                   the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL/GenBank/DDBJ
                                                                                                                                                                             phosphodiesterase I
                                               Craniata;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 68;
Pred. No.
kattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; C1
Mammalia; Eutheria; Rodentia; Sc
NCBI_TaxID=10116;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to the
                                                                                                                                                                                                                                                                                                                                                                                                                                            th 89.5%. Similarity 92.3% 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           209
                                                                                                                                                                              of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 189-875 E
Waterston R.H.;
Submitted (SEP-1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hou S., Wohldmann P.,
"The sequence of Home
Submitted (SEP-1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Waterston R.H.;
Submitted (JAN-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OF 189-875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   189-875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YMRPVYPTKTFPN
||| ||||||||||
```

ö

.rspt

213

copy\_201

69-

831

S

```
Mammalia; Eutheria;
Bovidae; Bovinae; Box
NCBI_TaxID=9913;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13
                                                                                                                                                                                                    ||| :|||||||
YMRAMYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 11; Conserv
                                                                                                                                                                                           1 YMRPVYPTKTFPN
                                                                                                                                                         Query Match
Best Local Similarity
Matches 11; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. MEDLINE-97250927;
                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                             Chem.
32 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            090761
090761;
01-NOV-1998
01-NOV-1998
                  Scott L.J.,
Maurice M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                               J. Biol.
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                              Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fowlpox
                                                                                                                                                                                                                                      14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15
                                                                                                                                                                                                           197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PC1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
090761
                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                              Q9TRD
 DR
DR
                                                                                      g
                                                                                                                                                                                                                                                                      RX
XX
                                                                                                                                                                                                                                                                                                                                                                                   RA
                                                                                                                                                                                                                                                                                                                                                                                                    RT
RT
RL
SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                       ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                rat neural differentiation reveals relationship to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           omi;
Rattus.
                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                     Rattus
                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi
Sciurognathi; Muridae; Murinae; Ra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euteleostomi Murinae; Ra
                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 875;
                                                                                      S
                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                            329CF41667497BC4 CRC64
                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                      9BA9FBFEF82DFBA6 CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
on update)
                                                                                                                                                                                                                   update)
                                                                                                                                                                                                            update)
                                                                                                       ä
                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 11;
0.0048;
                                                                                      DB 4;
0.0048;
                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
STRAIN=SPRAQUE-DAWLEY; TISSUE-BRAIN;
MEDLINE=95247775; PubMed=7730366;
Deissler H., Lottspeich F., Rajewsky M.F.;
"Affinity purification and cDNA cloning of ra and tumor cell surface antigen gpl30RBl3-6 rehuman and murine PC-1.";
J. Biol. Chem. 270:9849-9855(1995).
EMBL; Z47987; CAA88029.1; -.
                                                                                                                                                                                                             sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence uplast annotation
                                   UNKNOWN_2
                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                      UNKNOMN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            875
                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 65;
Pred. No. (
                                                                                    65;
                                                                                              .
2
                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                      Score
Pred.
                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                           Last
Last
InterPro; IPR001604; -.
InterPro; IPR002591; -.
Pfam; PF01033; Somatomedin_B; 2.
Pfam; PF01663; Phosphodiest; 1.
PROSITE; PS00524; SOMATOMEDIN_B;
                                                                                                                                                                                                                                                                                                                                                                                   PF01033; Somatomedin_B; 2.
PF01663; Phosphodiest; 1.
TE; PS00524; SOMATOMEDIN_B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P97676 PRELIMINARY; P)
P97676;
01-MAY-1997 (TrEMBLrel. 03, Crei
01-MAY-1997 (TrEMBLrel. 16, Las)
01-MAR-2001 (TrEMBLrel. 16, Las)
ALKALINE PHOSPHODIESTERASE.
Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; C;
Mammalia; Eutheria; Rodentia; S
                                                            100096 MW;
                                                                                                       ..
|-
                                                                                                                                                                                                                                    Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                     99087 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                              85.5%;
ilarity 84.6%;
Conservative
                                                                                                                                                                                                    01,
01,
16,
                                                                                    85.5%;
ilarity 84.6%;
Conservative
                                                                                                                                                                                                   (TrEMBLrel.
(TrEMBLrel.
(TrEMBLrel.
                                                                                                                                                                                   PRELIMINARY
                                                                                                                                        208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  209
                                                                                                                        13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13
                                                                                                                                                                                                                                                                                                                                                     SMART; SM00477; NUC;
Hydrolase.
SEQUENCE 875 AA;
                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PS00524; SOI
SMART; SM00477; NUC;
SEQUENCE 875 AA;
                                                                                                                                                                                                                                                                                                                                                          IPR001212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      l Similarity
11; Conserv
                                                                                                                               ||| :|||||||
YMRAMYPTKTFPN
                                                                                                                        YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YMRPVYPTKTFPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          875 AA;
                                                                                              . Similarity
11; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=10116;
[1]
                                                                                                                                                                                                                            RB13-6 ANTIGEN.
                                                                                                                                                                                Q63490
Q63490;
Q1-NOV-1996
01-NOV-1996
01-MAR-2001
                                                                                      Match
                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                    Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13
                                                                                                                                                                  12
                                                                                                                                                                                                                                                                                                                                                                                            Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -1
                                                                                                                                       196
                                                                                                     Matches
                                                                                                                        Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                      Query
Best 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
P97676
ID P99
AC P99
DT 01
DT 01
DT 01
OC EL OC EL OC MK
OC EL OC MK
OC EL OC MK
OC EL OC MK
                                                                                                                                                                  RESULT
Q63490
 q
                                                                                                                                                                                          g
                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
```

```
SEQUENCE.
MEDLINE=94086550; PubMed=7505270;
Oda Y., Kuo M.D., Huang S.S., Huang J.S.;
The major acidic fibroblast growth factor (aFGF)-stimulated phosphoprotein from bovine liver plasma membranes has aFGF-stimulated kinase, autoadenylylation, and alkaline nucleotide phosphodiesterase activities.";
                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                    and basolateral
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PHOSPHOPROTEIN (FRAGMENT).
Bos taurus (Bovine).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (2,
                                                               forms
                                                                                                                                                                                                                                                                                                                                                           875;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               on update)
(5'-EXONUCLEASE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9TRD2;
Q9TRD2;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
260 KDA MAJOR ACIDIC FIBROBLAST GROWTH FACTOR-STIMULATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32
                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                               4205F263E8A933EA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                distinct
                                                                              alkaline phosphodiesterase I expressed on the apical plasma membrane surfaces of rat hepatocytes."; Hepatology 25:995-1002(1997).

EMBL; U78788; AAB61536.1; -.

InterPro; IPR002591; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CRC64;
                      g.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1998 (TrEMBLrel. 08, Created)
01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
ALKALINE PHOSPHODIESTERASE I (EC 3.1.4.1) (5'-EXONUCLEOTIDE PHOSPHODIESTERASE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ï
                        Trugnan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 64; DB 6;
Pred. No. 0.0002;
); Mismatches
                                                                                                                                                                                                                                                                                                                                                         Score 65; DB 11;
Pred. No. 0.0048;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          268:27318-27326(1993).
va; 3699 mw; 5CCFFA9EB55E6927
                                                                "Biochemical and molecular identification of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           817 AA.
                                                                                                                                                                                                       Pfam; PF01033; Somatomedin_B; 2.
Pfam; PF01663; Phosphodiest; 1.
PROSITE; PS00524; SOMATOMEDIN_B; UNKNOWN_2 SMART; SM00201; SO; 1.
SEQUENCE 875 AA; 99071 MW; 4205F263E8A
                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
PubMed=9096610;
ier D., Meerson N.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                    ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84.2%;
ilarity 91.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                         85.5%;
84.6%;
                       D.,
                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bos.
                       Delautier
                                                                                                                                                                                                                                                                                                                                                                                                                                           13
```

÷

ö

```
Length 817;
                                                           Score 64; DB 14;
Pred. No. 0.0066;
); Mismatches
                                                           .Query Match
Best Local Similarity 91.7%;
Matches 11; Conservative
```

Gaps

ö

Indels

; 0

2 MRPVYPTKTFPN 13 ||||||| |||| 155 MRPVYPTNTFPN 166

ద

δ

Search completed: July 19, 2001, 14:46:49 Job time: 172 sec

us

```
4.5
Compugen
version
- 2000
GenCore (c) 1993
       Copyright
```

model ΣK using search, protein OM protein

Search 14:41:32 2001, 19, July on:

Run

34.65 Seconds alignments)
Million cell u rch time (without 1600.893

updates/sec

91

US-09-483-831-69 5019 1 MARRSSFQSCQIIS score: Perfect Title:

.RSYPEILTLKTYLHTYES MARRSSFQSCQIISLFTFAV edneuc

table: Scoring

0 Gapext 162 10.0 BLOSUM62 Gapop 1(

Ŋ

residues 60623988 412676 seqs, Searched

parameters satisfying chosen hits of number Total

Minimum

2000000000 length: length: sed sed 0B 0B Maximum Post-processing

summaries 0% 100% 45 St Minimum Match ( Maximum Match I Listing first

Database

K.

A\_Geneseq\_0601:\*

| SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:\* | SIDS8/gcgdata/geneseqgpaneseqp/AA1981.DAT:\* | SIDS8/gcgdata/geneseqgpeneseqp/AA1981.DAT:\* | SIDS8/gcgdata/geneseqgpeneseqp/AA1983.DAT:\* | SIDS8/gcgdata/geneseqgpeneseqp/AA1984.DAT:\* | SIDS8/gcgdata/geneseqgpeneseqp/AA1984.DAT:\* | SIDS8/gcgdata/geneseqgpeneseqp/AA1985.DAT:\* | SIDS8/gcgdata/geneseqgpeneseqp/AA1986.DAT:\* | SIDS8/gcgdata/geneseqgpeneseqp/AA1989.DAT:\* | SIDS8/gcgdata/geneseqgpeneseqp/AA1989.DAT:\* | SIDS8/gcgdata/geneseqggeneseqp/AA1989.DAT:\* | SIDS8/gcgdata/geneseqggeneseqp/AA1999.DAT:\* | SIDS8/gcgdata/geneseqggeneseqp/AA1991.DAT:\* | SIDS8/gcgdata/geneseqggeneseqp/AA1992.DAT:\* | SIDS8/gcgdata/geneseqggeneseqp/AA1993.DAT:\* | SIDS8/gcgdata/geneseqggeneseqp/AA1995.DAT:\* | SIDS8/gcgdata/geneseqggeneseqp/AA1995.DAT:\* | SIDS8/gcgdata/geneseqggeneseqp/AA1995.DAT:\* | SIDS8/gcgdata/geneseqggeneseqp/AA1999.DAT:\* | SIDS8/gcgdata/geneseqggeneseqp/AA1999.DAT:\* | SIDS8/gcgdata/geneseqggeneseqp/AA1999.DAT:\* | SIDS8/gcgdata/geneseqggeneseqp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseq/geneseqp/AA1999.DAT:\* | SIDS8/gcgdata/geneseq/geneseqp/AA1999.DA 

by chance to have a
the result being printed,
e distribution. results predicted | | to the score of t| | of the total score n or equal analysis o of the number than þ No. is the greater the fis derived Pred. score and is

## SUMMARIES

Result		e Ouerv				
NO.	Score	Match	Length	DB	ID	scri
1	501	00.	91	, <del>[</del>	1	A2058 autotaxin pr
7	01	00		22	AAY71987	Human melanoma aut
m	$\boldsymbol{\omega}$	ω,	9	22	AAY71988	Human teratocarcin
4	63	7	S	22	AAY71991	Human autotaxin pr
Ŋ	53	0	~	17	AAR86578	Autotaxin derived
9	0	ω	S	22	AAY71997	ď
7	30.	8	S	22	AAY71999	Rat autotaxin vari
ထ	29.	œ	S	22	AAY71998	in
σ	426.	ω,	S	22	AAY71986	Rat autotaxin prot
10	4423.5	88.1	828	22	AAY71996	in
	22.	8	S	22	AAY71995	

N-tera 2D1 autotax Rat brain autotaxi Autotaxin derived Autotaxin derived Human PC-1 polypep Human insulin rece	in receptor t cancer pr nt human PC dopsis thal dopsis thal dopsis thal	is thal is thal reted p de iden reted p	el polypepti PRO1107 pro ane-bound pr PRO1107 (UN orymonas gin CSGP-2 prot	Human secretory pr Human secreted pro Arabidopsis thalia Secreted protein e Human colon cancer MSF-K130. Synthet Protein encoded by Human megakaryocyt
AAR86595 AAY71989 AAR86580 AAR86579 AAY83620 AAR79148	3935 3935 3935 3132 2947 2947	2947 3132 1752 0237 9054	84654401	AAW/5859 AAY45165 AAG31319 AAW52839 AAB53540 AAR26050 AAR80041
12 12 17 12 16	222222	2200212	11120011	1010101010101010101010101010101010101010
487872	999755	900000	<b>4</b> 7771381	355 133 109 111 182 452
000000		44000		4 4 8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
434 430 427 384 955.		81110		357 357 241.5 200 179 134 134
				86844444 7880112844

## ALIGNMENTS

cytokine; autocrine motility stimulating protein; AMF; tumour; antibody; cancer diagnosis; therapy. AAR86596 standard; Protein; 915 AA 95WO-US06613 (first entry) A2058 autotaxin protein. Autotaxin; ATX; \_\_melanoma cell; Homo sapiens WO9532221-A2 24-MAY-1995; 30-NOV-1995. 01-JUL-1996 AAR86596; RESULT AAR86596 

Stracke M; Schiffmann E, (USSH ) US DEPT HEALTH & HUMAN SERVICES. Murata J, 94US-0346455. 94US-0249182. Liotta L, WPI; 1996-020533/02 28-NOV-1994; 25-MAY-1994; Krutzch J,

nseq Autotaxin motility stimulating protein, and DNA encoding it in cancer diagnosis and therapy

Claim 4; Page 91-94; 112pp; English.

Φ

SI

```
AAR86559-R86596 represent autotaxin (ATX) and fragments of it. This sequence represents the full length protein sequence of the A2058 melanoma cell line ATX protein. ATX is an autocrine motility stimulating protein which is present in cancer cells. ATX stimulates both random and directed migration of melanoma cells. The tumourous form of ATX is a secreted protein, while the transmembrane bound form is not present in tumour cells. The cDNA encoding this sequence can be used in a vector, to transform cells. The recombinant cells can then be used to produce the peptide sequences. Antibodies specific for these sequences can be produced, and can be used in cancer diagnosis and therapy. Different sites of localisation of the protein are utilised for diagnosis and prognosis of the stages of tumour progression. The sequences can be used in treatment methods to advantageously block the activity of the secreted form of AXT, while having little effect on the membrane form of
        555555555555555555%&
```

AA ហ 91 edneuce

```
099
                                                                                                               240
                                                                                                                            300
                                                                                                                                        300
                                                                                                                                                     360
                                                                                                                                                                 360
                                                                                                                                                                              420
                                                                                                                                                                                          420
                                                                                                                                                                                                      480
                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                         900
                                                                                                                                                                                                                                                                     600
                                                                                                                                                                                                                                                                                 999
                                                                                                                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                                        720
                                                                         180
                                                                                       180
                                                                                                   240
                                                 120
                                                              120
             Gaps
                        9
                                    9
                                                                                                                                                                                                      KIHRMDHYAAETRODKMTNPLREIDKIVGQLMDGLKQLKLRRCVNVIFVGDHGMEDVTCD
                                                                                                                                                                                                                                                                                       trpnypgimylqsdfdlgctcddkvepknkldelnkrlhtkgsteerhllygrpavlyrt
                                                                          STEERHLLYGRPAVLYRT
                         GRCFELQEAGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENACHC
                                                        TFHLRGREKFNHRWWGGQPLWITATKQGVKAGTFFWSVVIPHERRILTILRWLTLPDHER
                                                                                                                                 FQGDHGFDNKVNSMQTVF
                                                                                                   KGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDA
                                                                                                                                                                                                                                                                                                           ő
91
Length
             Indels
 • •
17
             .;
0
                                                                                                                                                                                                                                SGKCF
                                                                                                                                                                                                                                                                                  TRPNYPGIMYLQSDFDLGCTCDDKVEPKNKLDELNKRLHTKG
 DB
Score 5019;
Pred. No. 0;
; Mismatches
                                                                                                                                                                                                                                LPKRLHYANNRRIEDIHLLVERRWHVARKPLDVYKKP
            ö
100.0%;
100.0%;
            Conservative
      Local Similarity
es 915; Conser
 Match
Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                        661
                                                 61
                                                                                                                                        241
                                                                                                                                                     301
                                                                                                                                                                              361
                                                                                                                                                                                                       421
                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                      541
                                                              61
                                                                          21
                                                                                      21
                                                                                                   181
                                                                                                                181
                                                                                                                            241
                                                                                                                                                                 301
                                                                                                                                                                                           361
                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                  du
                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                               ద
                                      qq
                                                                                                                d
                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                            ğ
                         δ
                                                  ð
                                                              엄
                                                                           ŏζ
                                                                                       g
                                                                                                   Q
                                                                                                                             δŏ
                                                                                                                                         ద
                                                                                                                                                     Q
                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                   ð
```

780

**AYKNDKQMSYGFLFPPYLSSSPEAKYDAFLVTNMVPMYPAFKRVWNYFQRVLVKKYASER** 

721

õ

```
and
                                                                    840
                                                                                               900
                                                                                                                        900
                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present sequence is autotaxin isolated from human melanoma cells. Autotaxin is a glycoprotein cytokine which increases insulin signalling in adipose tissue by producing substrate for adenosine receptors, resulting in inhibition of lipolysis, decreased hepatic gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes. Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase (ATPase) and ATP pyrophosphatase activities.

Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (NIDDM) in humans,
elevated serum levels
obesity or dyslipidemia)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mellitus
                                       LSVSSFILPHRPDNEESCNSSEDESKWVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPE
                                                                                                                                                                                                                                                                                                                                                        Human; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity, adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal, type I phosphodiesterase activity; ATP pyrophosphatase activity; ATP pyrophosphatase activity; ATP pyrophosphatase activity; ATP activity; melanoma.
adenosine-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           treating diabetes mellituls and inhibit lipolysis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Autotaxin phosphodiesterase catalytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           diabetes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .g. lor
e by cells a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RGD_binding_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
127..129
/label= RGD_binding_
201..213
                                                                                                                                                                                                                                                    Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            autotaxin proteins, useful e.g.ity, stimulate glucose uptake
                                                                                                                                                                                                                                                  915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   126pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000WO-US12402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0306979
                                                                                                                                                                                                                                                   standard; Protein;
                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                  Human melanoma autotaxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ZYMO ) ZYMOGENETICS INC
                                                                                                                                                     915
                                                                                                                                                                                915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 27; Page 105-108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note=
                                                                                                                                                                    ILTLKTYLHTYESEI
                                                                                                                                                                                                                                                                                                        (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001-007397/01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                          sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  07-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-NOV-2000
                                                                                                                                                                                                                                                                                                        28-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Active-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JD;
                                                                                                                                                                                                                                                  AAY71987
                                                                                                                                                                                                                                                                              AAY71987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kelly
                                                                                                                                                                                                                        N
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI;
                                             781
                                                                                                841
                                                                                                                           841
                                                                                                                                                      901
                                                                                                                                                                                901
                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Key
                                                                                                                                                                                                                                  AAY71987
                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                          KW
                                                                                                                                                                                                                                                                                                                                                                                                                KW
XX
XX
XX
YX
FH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FT
FT
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PN
XX
PD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         XX
XX
YX
YX
PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          XX
TO
                                                                                                                                                                                                                                                                                                                     XX XX
                                                                                                                                                                                                                                                                                                                                                            Κ¥
                                                                                                                                                                                                                                                                                                                                                                                                      Κ¥
                                                                                                                            В
                                                                                                                                                                                 임
                                             δ
                                                                       d
                                                                                                 Q
                                                                                                                                                        ŏ
```

```
ö
                                                  20
                                                          20
                                                                 80
                                                                        80
                                                                               240
                                                                                              00
                                                                                                     00
                                                                                                             9
                                                                                                                    9
                                                                                                                                  20
                                                                                                                                         480
                                                                                                                                                 480
                                                                                                                                                        540
                                                                                                                                                               540
                                                                                                                                                                       900
                                                                                                                                                                              900
                                                                                                                                                                                     9
                                                                                                                                                                                            9
                                                                                                                                                                                                    20
                                                                                                                                                                                                           720
                                                                                                                                                                                                                  80
                                                                                       0
                                                                                                                           0
                                                                                                                                                                                                                         780
                                                                                                                                                                                                                                                900
                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                       900
                                                                                       24
                              bs
                                    0
                                                                                                                           N
                                                                                                                                                                                                                                         84
                                    9
                                           9
                                                                                                                            4
                                                                                                                                                                                             Ō
                             Ga
                                    SGSCK
||||||
                                                                                                                                                                                                    SQNCL
||||||
|sqncl
                                                  IHRMDHYAAETRODKMTNPLREIDKIVGOLMDGLKOLKLRRCVNVIFVGDHGMEDVTCD
                                                                                                                                                                                    SVSSFILPHRPDNEESCNSSEDESKWVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPE
                                                                 DPVFDA
                                                                                             ್ಷ
                                                                                                                                                                                                                                 Д
                                                                                                                                                                                                                                         Д
                                                                               GSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFD3
                                                                                                                                                                                                                                0
                                    SPWTNIS
for
                      91
                                                                                                                                                                                                   Ø
model
                             Indel
Φ
                            ;
0
a
                      S
                     8
                                    C
                      田
utotaxi
                      Score 5019;
Pred. No. 0;
; Mismatches
Ø
Ø
Ø
expr
                             ...
                            0
                     100.0%;
/ 100.0%;
rvative
Š
that (
                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                               σ
                                                                                                                                                                                                                                                              KTYLHTYESEI
||||||||||||
<tylhtyesei
    Q
                                    MARRSSFQSCQIIS
                         larity
Conserv
enic animals
metabolic di
           AA
          ъ
                         imil
          σ
                                                                                                                                                                                                                                                              ILTLK9
                             .
                         S
                     / Match
Local S
                            91
           ednence
                                                                               KG
Transg(
human r
                     Query Ma
Best Loc
Matches
                                                         61
                                                                                                            301
                                           \leftarrow
                                                  61
                                                                                              241
                                                                               181
                                                                                       81
                                                                                                     241
                                                                                                                                  361
                                                                 21
                                                                        21
                                                                                                                    301
                                                                                                                           361
                                                                                                                                         421
                                                                                                                                                                                                           661
                                                                                                                                                 421
                                                                                                                                                               481
                                                                                                                                                                       541
                                                                                                                                                                              541
                                                                                                                                                                                     601
                                                                                                                                                                                            601
                                                                                                                                                                                                    661
                                                                                                                                                                                                                  721
                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                 81
                                                                                                                                                                                                                                        81
                                                                                                                                                                                                                                                       841
                                                                                                                                                                                                                                                               901
                                                                                                                                                        8
                                                                                                                                                                                                                                                84
                                                                                                                                                        4
SSXS
                                           임
                                                  ά
                                                          엄
                                                                        d
                                                                                       d
                                                                                                     d
                                                                                                                    g
                                                                                                                                                 d
                                                                                                                                                               d
                                                                                                                                                                                            요
                                                                                                                                  g
                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                       g
                                                                 ð
                                                                               δ
                                                                                              à
                                                                                                             ò
                                                                                                                           ð
                                                                                                                                          ò
                                                                                                                                                                       ð
                                                                                                                                                                                                                          움
                                                                                                                                                                                                                                         d
                                                                                                                                                                                     õ
                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                 οŽ
                                                                                                                                                                                                                                                               ğ
                                                                                                                                                                                                                                                ă
```

```
and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          substrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence is autotaxin isolated from human teratocarcinoma cells. Autotaxin is a glycoprotein cytokine which increases insulin signalling in adipose tissue by producing substrate for adenosine receptors, resulting in inhibition of lipolysis, decreased hepatic gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes. Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase (ATPase) and ATP pyrophosphatase activities.

Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia).

Transgenic animals that overexpress autotaxin are models for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                    site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ed serum levels
r or dyslipidemia)
models for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               adenosine-5'
                                                                                                                                    Human; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal; type I phosphodiesterase activity; ATP pyrophosphatase activity; ATPase; adenosine-5'-triphosphatase activity; teratocarcinoma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            e.g. for treating diabetes mellitus ike by cells and inhibit lipolysis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52;
                                                                                                                                                                                                                                                                                                      201..213
/note= "Autotaxin phosphodiesterase catalytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 863;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 22;
                                                                                                                                                                                                                                                   Location/Qualifiers
127..129
/label= RGD_binding_domain
201..213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ed. No. 0;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 4681;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   English
                           Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            stimulate glucose uptake
                                                                                                            autotaxin.
                           863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nseful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    126pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93.3%;
ilarity 93.8%;
Conservative
                           AAY71988 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                 990S-0306979
                                                                                                                                                                                                                                                                                                                                                                                                     2000WO-US12402
                                                                                entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Transgenic animals that o
human metabolic diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           proteins,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     108-110;
                                                                                                            teratocarcinoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZYMOGENETICS
                                                                               (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001-007397/01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      al Similarity
858; Concorr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 27; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          863
                                                                                                                                                                                                                                                                                                                                                WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              autotaxin
                                                                                                                                                                                                                                    sapiens
                                                                                                                                                                                                                                                                Key
Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                     05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                 07-MAY-1999;
                                                                                28-MAR-2001
                                                                                                                                                                                                                                                                                                        Active-site
                                                                                                                                                                                                                                                                                                                                                                          16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SD:
                                                    AAY71988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            obesity,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ZYMO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kelly
                                                                                                            Human
                                                                                                                                                                                                                                     Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -
RESULT
AAY71988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nes
                                                                                            XX
                                                                                                                                                                                                         XX
OS
                                                                                                                                                                                                                                                XX
FH
FT
FT
                                                                                                                                                                                                                                                                                                      FT
FT
                                                                                                                                                                                                                                                                                                                                 XX
PN
                                                                                                                                                                                                                                                                                                                                                             XX
                                                                                                                                                                                                                                                                                                                                                                                        KΣ
                                                                                                                                                    ΚW
                                                                                                                                                                  Κ¥
                                                                                                                                                                                             Σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
```

ä

ហ

91

901

Ы

Tue

```
840
                                                                                                                                                                                               88
                                                                                                                                                                                                      900
                                                                                                                                                         720
                                                                                                                                                                        780
                                                                                                                                                                               28
                                                                                                                                                                                                              848
                                                             9
                                                                                                   428
                                                                                                                  88
                                                                                                                          900
                                                                                                                                         999
                                                                                                                                                 608
       20
               80
                              240
                                      40
                                                     00
                                                                     24
                                                                                    \boldsymbol{\omega}
                                                                                           0
                                                                                                           0
                                                                                                                                 œ
                                                                                                                                                                68
120
                      0
                                              0
                                                                            0
                       œ
                                              0
                                                                                    36
                                                                                            ω
                                                                                                                                                                 ō
                                                                                                                   4
                                                             ß
                                                                                            4
                                                                                                                                                                                                       SYPE
                                                                                                   ф
                                                                                                                                                         SONCE
                                                                                                                                                                       TRPNYPGIMYLQSDFDLGCTCDDKVEPKNKLDELNKRLHTKGSTEERHLLYGRPAVLYRT
                                                                                                                                                                                                               Φ
                                              KGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDA
                                                             SYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRR
                                                                                                                                                                                                          Sype
                                                                                           ensitivi
                                                                                                                                                                                                      enesis; insulin sensiti
anorectic; antilipemic
                                                                                                                                                                                                                                                                               sis; gluconeogenesis
antidiabetic; anore
                                                                                                                                                                                                                                                 ¥
                                                                                                                                                                                                                                                 σ
                                                             SVYAFYSEQPDFSGHKYGPFGPEES.
                                                                                                                                                                                                                                                 œ
                                                                                                                                                                                                                                                                               lipolysis
                                                                                                                                                                                                                                                 otein
                                                                                                                                                                                                                                                                                   poglycemic;
                                                                                                                                                                                                                             863
                                                                                                                                                                                                                      S
                                                                                                                                                                                                                      91
                                                                                                                                                                                                                      Ď,
                                                                                                                                                                                                                                                                       autotaxin prot
                                                                                                                                                                                                                                                                (first
                                                                                                                                                                                                                                                 tandard
                                                                                                                                                                                                                                                                                autotaxin
                                                                                                                                                                                                      LSVSSFILPH
    grcfelge
                                                                                                                                                                                                                                                                -2001
                                                                                                                                                                                                                                                                                   cyte;
                                                                                                                                                                                                                                                 W
                                                                                                                                                                                                                                                 AAY71991
                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                28-MAR
                                                                      Ď,
                                                                                                                                                                                                                                                                                   adipo
                                                                                                                                                                                                                                                                                Human
                                                                                                                                                                                                                                          4
                                                                                                                  429
                                                                                                                                                                                699
                                                                                                                                                                                                       841
                                                                                                                                                                                                                      901
                                                                                                                                                                                                                              Φ
                                                                                                                                  489
                                                                                                                                                 549
                                                                                                                                                                609
                                                                                                                                                                        21
                                                                                                                                                                                                               O
                                                                                                   369
                                                      241
                                                             301
                                                                                    325
                                                                                            421
                                                                                                           81
                                                                                                                           541
                                                                                                                                         601
                                                                                                                                                         661
61
        61
                       21
                               181
                                      181
                                              241
                                                                     301
                                                                             361
                                                                                                                                                                                        81
                                                                                                                                                                                                                                         RESULT
AAY71991
                                                                                                                                                                                                                             84
                                                                                                                                                                                               ^{\circ}
                                                                                                                                                                                                               \alpha
                                                                                                           4
                                                                                                                                                                        _
                                                                                                                                                                                                                                                    a
                                                                                                                                  d
                                                                                                                                                 유
                                                                                                                                                                 g
                                                                                                                                                                                g
                                                                                                                                                                                               임
                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                               d
                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                 g
                                                                                                                   임
                                                                                                                                                                        Q
                                                                                                                                                                                        φ
                                                             ÓΥ
                                                                     엄
                                                                                                                           δ
        В
                       D
                                      g
                                                      셤
                                                                                                                                          δ
                                                                                                                                                         δ
               Q
                               Q
                                              Q
                                                                             ð
                                                                                            Q
                                                                                                           ö
```

```
and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    186
                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence is human autotaxin protein.

Autotaxin is a glycoprotein cytokine which increases
insulin signalling in adipose tissue by producing substrate for
adenosine receptors, resulting in inhibition of lipolysis,
decreased hepatic gluconeogenesis and serum glucose levels, and
increased insulin sensitivity. It also inhibits differentiation
of adipocytes. Autotaxin has type I phosphodiesterase, adenosine-5'-
triphosphatase (ATPase) and ATP pyrophosphatase activities.
Autotaxin and its analogues are used to stimulate glucose uptake
by cells, particularly to reduce serum glucose levels for
treatment of non-insulin dependent diabetes (NIDDM) in humans,
or generally any condition associated with elevated serum levels
of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia).
Transgenic animals that overexpress autotaxin are models for
human metabolic diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŭ
                                                                                                                                                                                                                                                                                                                                                                   or treating diabetes mellitus cells and inhibit lipolysis -
therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal; type I phosphodiesterase activity; ATP pyrophosphatase activity; ATP pyrophosphatase activity; ATPase; adenosine-5'-triphosphatase activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDATFHLRGREKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            52;
                                                                                                                                                                   site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      859
                                                                                                                                                      .97..209
/note= "Putative phosphodiesterase active
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                        domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22;
                                                                                                          transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                  8..26
/note= "Putative transmembra
44..45
123..125
/label= RGD_binding_domain
197..209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ed. No. 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 4632
                                                                                                                                                                                                                                                                                                                                                                                                        English.
                                                                                                                                                                                                                                                                                                                                                                     ins, useful e.g. f
glucose uptake by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred
                                                                                                                                                                                                                                                                                                                                                                   nseful
                                                                                                                                                                                                                                                                                                                                                                                                       126pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Match 92.3%;
Local Similarity 93.7%;
les 848; Conservative
                                                                                                                                                                                                                                                               99US-0306979
                                                                                                                                                                                                                                        2000WO-US12402
                                                                                                                                                                                                                                                                                      INC
                                                                                                                                                                                                                                                                                                                                                                                                        Page 119-121;
                                                                                                                                                                                                                                                                                                                                                                    axin proteins
stimulate qlu
                                                                                                                                                                                                                                                                                      2 YMOGENETICS
                                                                                                                                                                                                                                                                                                                                   2001-007397/01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      859 AA;
                                                                                                                                                                                                                                                                                                                                                AAD02133
                                                                                                                                                                                           WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                       autotaxin
                                                                                                                      Cleavage-site
                                                                                                                                   Binding-site
                                                              sapiens
                                                                                                                                                                                                                  16-NOV-2000.
                                                                                                                                                                                                                                        5-MAY-2000;
                                                                                                                                                                                                                                                               07-MAY-1999;
                                                                                                                                                         Active-site
                                                                                                                                                                                                                                                                                                                                                                                                         27;
                                                                                                                                                                                                                                                                                                              gD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                obesity,
                                                                                                                                                                                                                                                                                                                                              N-PSDB;
                                                                                                                                                                                                                                                                                     (ZYMO
                                                                                                 Domain
                                                                                                                                                                                                                                                                                                                                                                                                         Claim
                                                                                                                                                                                                                                                                                                              Kelly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best_Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11
                                                             Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       127
                                                                                                                                                                                                                                                                                                                                     WPI
                                                                                     Key
                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        D
D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                            FT
FT
XX
                                                                                                                                                                                          Qγ
                          KW
XX
OS
XX
XX
FH
                                                                                                FT
FT
FT
```

ä

Tu

```
310
                  306
                           370
                                     320
                                              430
                                                      374
                                                               490
                                                                        434
                                                                                  550
                                                                                                   610
                                                                                                            554
                                                                                                                      670
                                                                                                                                        730
                                                                                                                                                 674
                                                                                                                                                          790
                                                                                                                                                                            850
                                                                                                                                                                                               910
                                                                                                                                                                                                                                                                                    AMF
9
                                                                                           494
                                                                                                                                                                   734
                                                                                                                                                                                     94
                                                                                                                                                                                                       854
24
                                                                                                                                                                                 ||||
ilph
        PDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRKIHRMDHYAA
                                                                                                                     TKVPPFENIELYNVMCDLLGLKPAPNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMY
                                                                                                                                                                                                                                                                                     protein;
                                                                                 klrscgthspymrpvyptktfpnlytlatglypeshgivgnsmydpvfdatfhlrgrek
                                                                                                                                                                             SFILP
                                                                                                                                                                                SILTSCLDFTQPADKCDGPLSVS
                                                                                                                                                                                                                                                                                         therapy
                                                                                                                                                                                                                                                                                    stimulating
                                                                                                                                                                                                                                                                                         diagnosis;
                                                                                                                                                                                                                                                                           A205
                                                                                                                                                                                                                                                                                    motility
                                                                                                                                                                                                                                                                           line
                                                                                                                                                                                                                                                                                         cancer
                                                                                                                                                                                                                                                                           cell
                                                                                                                                                                            FDYDYDGLHDTEDKIKQYVEGSSIPVPTHYY
                                                                                                                                                                                                                                                                                    e; autocrine
antibody; ca
                                                                                                                                                                                                                                                Z
                                                                                                                                                                                                                                                829
                                                                                                                                                                                                                                                                            melanoma
                                                                                                                                                                                                                                                Protein;
                                                                                                                                                                                                                                                                                                                              5WO-US0661
                                                                                                                                                                                                                                                                   entry)
                                                                                                                                                                                                                                                                                                                                       94US-03464
                                                                                                                                                                                                                                                                                    cytokine;
                                                                                                                                                                                                                                                                           from
                                                                                                                                                                                                                                                                                         tumour;
                                (first
                                                                                                                                                                                                                                                 ٠.
                                                                                                                                                                                                                                                                           derived
                                                                                                                                                                                                                                                standard
                                                                                                                                                                                                                                                                                    ATX;
                                                                                                                                                                                                                         859
                                                                                                                                                                                                                N,
                                                                                                                                                                                                                91
                                                                                                                                                                                                                                                                                                           -A2
                                                                                                                                                                                                                                                                                                   sapiens
                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                       -NOV-1994
                                                                                                                                                                                                                YESEI
|||||
yesei
                                                                                                                                                                                                                                                                                    Autotaxin;
                                                                                                                                                                                                                                                                  28-JUN-199
                                                                                                                                                                                                                                                                           Autotaxin
                                                                                                                                                                                                                                                                                                                    30-NOV-19
                                                                                                                                                                                                                                                                                                           WO9532221
                                                                                                                                                                                                                                               AAR86578
                                                                                                                                                                                                                                                                                         anoma
                                                                                                                                                                                                                                                         Ø
                                                                                                                                                                                                                                                                                                  Ношо
                                                                        375
                                                                                                            495
                                                                                                                              555
                                                                                                                                       671
187
         251
                  247
                                             371
                                                               31
                                                                                          435
                                                                                                   551
                           311
                                    307
                                                      321
                                                                                 491
                                                                                                                     611
                                                                                                                                                615
                                                                                                                                                          731
                                                                                                                                                                            791
                                                                                                                                                                                    35
                                                                                                                                                                                              851
                                                                                                                                                                                                       795
                                                                                                                                                                                                                911
                                                                                                                                                                                                                         855
                                                                                                                                                                   S
                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                         nel
                                                                                                                                                                                                                                           57
                                                                                                                                                                                                                                                                                                                                       28
                                                                                                                                                                                                                                       RESULT
AAR865
D
                  g
                                    g
                                                                                                            d
                                                                                                                                                                                                                                                    d
                                                                        g
                                                                                          a
                                                                                                                              a
P
                                                                                                                                                 d
                                                                                                                                                                                                                                                П
                                                                                                                      ð
                                                                                                                                        Qγ
                                                                                                                                                                            Ω
                                                                                                                                                                                                       d
                                                                                                                                                                                                                Q
         ð
                           ð
                                              ð
                                                               Q
                                                                                  Š
                                                                                                   9
                                                                                                                                                          δ
                                                                                                                                                                   a
                                                                                                                                                                                     엄
```

```
of the
                                                                                                                                                                         The
                                                                                                                         AAR86559-R86596 represent autotaxin (ATX) and fragments of it. ATX is an autocrine motility stimulating protein which is present in cancer cells. ATX stimulates both random and directed migration of melanoma cells. The tumourous form of ATX is a secreted protein, while the transmembrane bound form is not present in tumour cells. The cDNA encoding this sequence can be used in a vector, to transform cells. The recombinant cells can then be used to produce the peptide sequences. Antibodies specific for these sequences can be produced, and can be used in cancer diagnosis and therapy. Different sites of localisation of the protein are utilised for diagnosis and prognosis of the stages of tumour progression. The sequences can be used in treatment methods to advantageously block the activity of the secreted form of AXT, while having little effect on the membrane form of AXT.
                                                                                                                                                                                                             tumour
                                                                                                                              is
                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                         146
                                                                                                                                                                                                                                                                                                                                                            206
                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                266
                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                    326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           686
                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                        CHDFDELCLKTARGWECTKDRCGEVRNEENACHCSEDCLARGDCCTNYQVVCKGESHWVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DILGIKPAPNNGTHGSLNHLLRTNTFRPTMPEEVTRPNYPGIMYLQSDFDLGCTCDDKVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PKNKLDELNKRLHTKGSTEERHLLYGRPAVLYRTRYDILYHTDFESGYSEIFLMLLWTSY
                                                                                 ns
                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                    829
                                                                                 <u>.</u>
                                    Ξ
                                                                                                                                                                                                                                                                                     Length
                                                                                encoding
                                                                                                                                                                                                                                                                                                       Indels
                                     Strack
                                                                                                                                                                                                                                                                                                      1;
                                                                                 and DNA
                                                                                                                                                                                                                                                                                    17
                                    ப்
                                                                                                                                                                                                                                                                                     DB
                                   Schiffmann
                                                                                                                                                                                                                                                                                    Score 4533; D
Pred. No. 0;
0; Mismatches
                                                                                protein,
                   SERVICES
                                                                                                            English
                                     J,
                                                                                         and therapy
                                                                                 stimulating
                   & HUMAN
                                                                                                                                                                                                                                                                                                       ö
                                     Murata
                                                                                                                                                                                                                                                                                    90.3%;
ilarity 99.9%;
Conservative
                                                                                                            112pp;
94US-0249182
                   DEPT HEALTH
                                     ij
                                                                                                            -60;
                                                                                 motility s
diagnosis
                                                      1996-020533/02
)B; TO6612.
                                     Liotta
                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 828; Conser
                                                                                                                                                                                                                                                          AA;
                                                                                                            57
                                                                                                                                                                                                                                                          829
                                                                                                            Page
-1994;
                   ΩS
                                    <mark>ب</mark>
                                                                                 Autotaxin
                                                                                           in cancer
                                                                                                           4;
                                                                                                                                                                                                                                                          Sequence
                   (USSH)
                                                              N-PSDB;
25-MAY
                                                                                                           Claim
                                                       WPI;
                                                                                                                                                                                                                                                                                                                        87
                                                                                                                                                                                                                                                                                                                                                            147
                                                                                                                                                                                                                                                                                                                                           –
                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                    267
                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       567
88888888888888888
                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D
                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
```

0

us

~

```
and
900
                        746
                                                                                            720
                                                                                                                  866
                                                                                                                                                                                                                                                                                                                                                                                                   variant
                                              999
                                                                     806
                                                                                                                                         780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      te by cells, particularly of non-insulin dependent condition associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      lation of adipocytes. adenosine-5'-triphosphatase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         In present sequence is variant (S236T) of rat autotaxin protein. Autotaxin is a glycoprotein cytokine which increases insulin signalling in adipose tissue by producing substrate for adenosine receptors, resulting in inhibition of lipolysis, decreased hepatic gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes. Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase (ATPase) and ATP pyrophosphatase activities. Autotaxin and its analogues are used to stimulate glucose uptake by cells, particular to reduce serum glucose levels for treatment of non-insulin deneration diabetes (NIDDM) in humans, or appearance.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mellitus
                                                                                                                                                                                                                                                                                                                                                                    animal;
                     TVSKQAEVSSVPDHLTSCVRPDVRVSPSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKY
                                                                                                                 DAFLVTNMVPMYPAFKRVWNYFQRVLVKKYASERNGVNVISGPIFDYDYDGLHDTEDKIK
                                                                               pknkldelnkrlhtkgsteerhllygrpavlyrtrydilyhtdfesgyseiflmllwtsy
                                                                                                                                                                                                                                                                                                                                        Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose non-insulin dependent diabetes mellitus; NIDDM; transgenic animatype I phosphodiesterase activity; ATP pyrophosphatase activity; ATP activity; mutant; mutein; var
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   treating diabetes mellity.
Is and inhibit lipolysis
                                                                                                                                                                915
                                                                                                                                                                                      σ
                                                                                                                                                                                       82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Thr
                                                                                                                                                                WVEELMKMHTARVRDIEHLTSLDFFRKTSRSYPEILTLKTYLHTYESEI
                                                                                                                                                                       βy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 substituted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cells and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               by
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       e.g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Wild type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uptake
                                                                                                                                                                                                                                               standard; Protein; 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    useful
                                                                                                                                                                                                                                                                                                                  (S236T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000WO-US12402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  glucose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      126pp;
                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99us-030697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     proteins
                                                                                                                                                                                                                                                                                                                    variant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZYMOGENETICS
                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001-007397/01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 stimulate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200068386-A1
                                                                                                                                                                                                                                                                                                                    autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05-MAY-2000;
                                                                                                                                                                                                                                                                                             28-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                         Rattus sp. Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ij.
                                                                                                                                                                                                                                               AAY71997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 obesity,
                                                                                                                                                                                                                                                                      AAY71997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (ZYMO
                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kelly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI;
541
                                                                  747
                       687
                                                                                          661
                                                                                                                 807
                                                                                                                                                              867
                                             601
                                                                                                                                       721
                                                                                                                                                                                     781
                                                                                                                                                                                                                                                                                                                    Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Key
                                                                                                                                                                                                                                    97
                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                 AAY7
                                                                                                                                                                                                                                                                     g
                                                                                          d
                                                                                                                                         Б
                                                                                                                                                                                     d
                                                                                                                                                                                                                                               П
                        ŏ
                                                                     ŏ
                                                                                                                  ö
                                                                                                                                                                ğ
```

```
53
                                                                                           190
                                                                                                            250
                                                                                                                            0
                                                                                                                                    305
                                                                                                                                             0
                                                                                                                                                     σ
                                                                                                                                                             30
                                                                                                                                                                             490
                                                                                                                                                                                     33
                                                                                                                                                                                              550
                                                                                                                                                                                                              610
                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                               730
                                                                           0
                                                                                   S
                                                                                                   S
                                                                                                                    S
                                                                                                                                                                     \omega
                                                                                                                                                                                                      3
                                                                                                                                                                                                                                       സ
                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                 0
                                                  Gaps
                                                                  2
                                                                           13
                                                                                                                                             37
                                                                                                                                                     31
                                                                                                                                                                                                                                                        67
                                                          0
                                                                                                   \infty
                                                                                                                                                                                                                                                                σ
                                                                                                                                                                                                                                                                                S
                                                                                   Q
                                                                                                                    24
                                                                                                                                                                     37
                                                                                                                                                                                                      σ
                                                                                                                                                                                                                               67
                                                                                                                                                                                                                                                                        (L)
                                                                                                                                                                                      4
                                                                  ø
     Ø
                                                          ~
                                                                                                                                                                                                                                                                        ~
                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                        7
                                                                                                                                                             SNYLT
                                                                                                                                                                             闰
                                                                                                                                             ď
                                                                                                                                                                                                                                                                                                HLRGREKF
                                                                                                                                                                                                              RTRYDILYHTDF
                                                                                                                                                                                                                                                                                FILPE
|||||
filp
                                                                                                                                                                                                                               þ
                                         58
 ci
                                                  53
             tion
                                                                                                                                                             <u>ა</u> — თ
 ď
                                         œ
     er
                                                                                                                                                                                                                                                                                Length
with elevated serum levels of glucose, lipid or free fatt (e.g. obesity or dyslipidemia). Transgenic animals that cautotaxin are models for human metabolic diseases.

Note: The present sequence is not shown in the specificat but is derived from rat autotaxin protein sequence found page 101-104 of sequence listing (AAY71986).
                                                  S
                                                  Indel
                                          N
                                          2
                                                  •
                                                 19
                                          DB
                                         9 4430.5;
No. 0;
ismatches
                                         Score
Pred.
                                                  30
                                          .. ..
                                         18.38;
18.78;
                                                  tive
                                          ထထ
                                             Local Similarity
Les 803; Conserva
                              Z
                                                                                                                                                                                                                                                                                 DGLHDT
                             \boldsymbol{\omega}
                                                                                                                                                              ETRODKMT
                                                                                                                                                                                                                                                   Ø
                                                                                                                                                                                                                                                                                    |||:|||
fdynydg
                                                                                                                                                                                                                                                                                 DYDY
                                                                                                                                                                                                                                                ESGY
                                         Query Match
Best Local S
Matches 803
                              Sequence
                                                                           71
                                                                                                                             251
                                                                                                                                                             371
                                                                                   99
                                                                                                    126
                                                                                                            191
                                                                                                                    186
                                                                                                                                     246
                                                                                                                                             311
                                                                                                                                                                     320
                                                                                            131
                                                                                                                                                     306
                                                                                                                                                                              431
                                                                                                                                                                                              491
                                                                                                                                                                                                      434
                                                                                                                                                                                                               551
                                                                                                                                                                                                                       494
                                                                                                                                                                                                                               611
                                                                                                                                                                                                                                       554
                                                                                                                                                                                                                                               671
                                                                                                                                                                                                                                                                731
                                                                                                                                                                                                                                                                                         734
                                                                   ~
                                                                                                                                                                                      4
                                                                                                                                                                                                                                                                        す
                                                                                                                                                                                                                                                                                791
                                                                                                                                                                                                                                                                                                 851
                                                                                                                                                                                      37
                                                                                                                                                                                                                                                                        67
                                                                                                                                                                                                                                                        61
SSSSSXX
                                                                   a
                                                                                    d
                                                                                                    d
                                                                                                                    g
                                                                                                                                     엄
                                                                                                                                                     셤
                                                                                                                                                                      엄
                                                                                                                                                                                      엄
                                                                                                                                                                                                       엄
                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                        엄
                                                                           5
                                                                                                                                              Š
                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                        吕
                                                                                                                                                                                                                                                                                         엄
                                                                                            ð
                                                                                                             õ
                                                                                                                             g
                                                                                                                                                              8
                                                                                                                                                                              გ
                                                                                                                                                                                              5
                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                 Ö
```

S

 $\boldsymbol{\omega}$ 

94

~

ם

Ø Н

9

9

Н 3 0 1 3  $\infty$ マ

g 0

us

\_

```
The present sequence is variant (S289T) of rat autotaxin protein.

Autotaxin is a glycoprotein cytokine which increases insulin
signalling in adipose tissue by producing substrate for adenosine
receptors, resulting in inhibition of lipolysis, decreased hepatic
gluconeogenesis and serum glucose levels, and increased insulin
sensitivity. It also inhibits differentiation of adipocytes.
Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase
(ATPase) and ATP pyrophosphatase activities. Autotaxin and its
analogues are used to stimulate glucose uptake by cells, particularly
to reduce serum glucose levels for treatment of non-insulin dependent
clabetes (NIDDM) in humans, or generally any condition associated
with elevated serum levels of glucose, lipid or free fatty acid
(e.g. obesity or dyslipidemia). Transgenic animals that overexpress
autotaxin are models for human metabolic diseases.
Note: The present sequence is not shown in the specification
but is derived from rat autotaxin protein sequence found in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                             variant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for treating diabetes mellitus cells and inhibit lipolysis -
                                                                                                                                                                                                                                           Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal; type I phosphodiesterase activity; ATP pyrophosphatase activity; ATP pyrophosphatase activity; autein; variant?
                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "Wild type Ser substituted by Thr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               present sequence is not shown in
lived from rat autotaxin protein s
104 of sequence listing (AAY71986)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        eful e.g. f
uptake by
                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    English.
                                                                                                               standard; Protein; 858 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New autotaxin proteins, useful obesity, stimulate glucose upta
                                                                                                                                                                                                              autotaxin variant (S289T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000WO-US12402.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62690E0-Sn66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -; 126pp;
                                                                                                                                                                                                                                          Rat; autotaxin; lipolysis;
                                                                                                                                                                               entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (2YMO) ZYMOGENETICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-007397/01.
                                                                                                                                                                            (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Page
                                                                                                                                                                                                                                                                                                                                                                                                           Key
Misc-difference
915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101-104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-MAY-1999;
                                                                                                                                                                             28-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-NOV-2000
                | | | | | | yesei
                                                                                                                                                                                                                                                                                                                                                           Rattus sp.
Synthetic.
911 YESEI
                                                                                                                                             AAY71999;
                                                                                                              AAY71999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                        Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kelly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                page
                                                                                                                                                                                                              Rat
                                                                                             666
                                                                              RESULT
AAY7199
                              g
                                                                                                                                             ŏ
```

```
310
                                                                370
                                                                             30
                                                                                                       20
                          0
                                       0
                                                                       319
                                                                                                33
                                                                                                                    610
                                                                                                                                              30
                   S
                                ហ
                                             S
                                                          S
                                                                                    3
                                                                                          0
                                                                                                                          53
                                                                                                                                 0
                                                                                                                                                           90
                                                                                                                                       3
                                                                                                                                                    3
                                                                                                                                                                 3
                                                                                                                                                                        50
                                                                                                                                                                              3
                                                                                                                                                                                    0
0
      2
                          σ
                                \infty
                                                                                          ð
                                                                                                              Ö
                                                                                    37
                                                                                                                                                    67
                                                                                                                                                                 ^{\circ}
                                                                                                                                                                              g
                                                                                                                                                                                           S
                                                                                                 4
                                                                                                                                                                                           \mathbf{\omega}
EAG
| |
                                                                                                                                                                       FILPH
||||||
|filph
             GBC = 1
                                                    6 —
                                       ()
                                 Ø
                                                                                                                                  HTDF
                                                                                                                                              Б
                                                                             ×
                                                                                                                    LARGDC
|:|||
                                                                                                                                 OILYHTDE
||||||||||
|dilyhtdf
                         =2
                                                                                                                                                                       FDYDYDGLHDTEDKIKOYVEGSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSS
             CKGRCE
||||||
                                                                                                                                 <u>—</u> თ
--- ŭ
AEGWEEGPPTVLS
|| | :|||||||
ae-wdegpptvls
                                                                                                                                                                                                                         Z
IKRAI
||||
                                                                                                                                                                                                                         œ
                                                                                                                                                                                                                         S
                                                                                                                                                                                                                         \boldsymbol{\omega}
                                                                                                                                                                                                                         C
/GVSICLGFTAH
: |:||||||||
|svniclgftas
                                                                                                                                                                                                                         ei
                                                                                                                                                                                                                         0
                                                                                                                                                                                                                         Pr
             rd
                                                                                                                                                                                                        \alpha
                                                                                                                                                                                                                         tand
LETE
||||||
||ftfa
                                                                                                                                                                                                  91
                                                                                                                                                                                                        œ
                                                                                                                                                                                                 ESEI
|---|
esei
                                                                                                                                                                                                                         (C)
S
OII:
rvi:
                                                                                                                                                                                                                        \infty
                                                                                                                                                                                                                               \boldsymbol{\omega}
                                                                              ET
                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                  Θ
             71
                    9
                          131
                                 Ø
                                       91
                                              Ø
                                                    51
                                                          9
                                                                 311
                                                                       9
                                                                                    320
                                                                                           431
      ~
                                                                             371
                                                                                                374
                                                                                                                                              671
                                                                                                       491
                                                                                                              434
                                                                                                                           494
                                                                                                                                 611
                                                                                                                                        554
                                                                                                                                                           731
                                                                                                                                                                        791
                                                                                                                                                                              734
                                                                                                                                                                                                  911
                                                                                                                     51
                                                                                                                                                     4
                                                                                                                                                                  ず
                                                                                                                                                                                     851
                                                                                                                                                                                            4
                                                                                                                                                                                                                 RESULT
AAY71998
ID AAY7
XX
AC AAY7
XX
DT 28-N
                                                           24
                                                                       30
                    Ō
                                 ā
                                              \overline{\mathbf{x}}
                                                                                                                                                     19
                                                                                                                                                                                                        85
                                                                                                                                                                 67
                                                                                                                                                                                           Φ
                                                                                                                                                                                                                                     ω
       엄
             ð
                    g
                                 Б
                                              ద
                                                          a
                                                                       원
                                                                              ğ
                                                                                    엄
                                                                                           Q
                                                                                                 d
                                                                                                        8
                                                                                                              g
                                                                                                                    QΥ
                                                                                                                           a
                                                                                                                                        a
                                                                                                                                                     d
                                                                                                                                                                  d
                                                                                                                                                                        Q
                                                                                                                                                                               d
                                                                                                                                                                                           a
                                                                                                                                                                                                        d
                                                                                                                                  δ
                                                                                                                                                            ð
                          δ
                                       ğ
                                                    δ
                                                                 ŏ
                                                                                                                                               õ
                                                                                                                                                                                     ð
                                                                                                                                                                                                  ò
```

en

S

(f1

-2001

-MAR

Gaps

53;

Indels

19;

Length 858;

22;

DB

Score 4430.5; Pred. No. 0; 30; Mismatches

ch 88.3%; ll Similarity 88.7%; 803; Conservative

Query Match Best Local

Matches

30;

b

Q Н

9

9

3  $\infty$ 1 3  $\infty$ マ

g

us

91

variant

8

b

```
Autotaxin is a glycoprotein cytokine which increases insulin signalling in adipose tissue by producing substrate for adenosine receptors, resulting in inhibition of lipolysis, decreased hepatic gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes. Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase (ATPase) and ATP pyrophosphatase activities. Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia) Transcenticalinia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      or treating diabetes mellitus cells and inhibit lipolysis -
                          Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal type I phosphodiesterase activity; ATP pyrophosphatase activity; ATPase; adenosine-5'-triphosphatase activity; mutant; mutein; var
                                                                                                                                                                                                           "Wild type Arg substituted by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Serum levels of glucose, lipid or ile or dyslipidemia). Transgenic animals models for human metabolic diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            s derived from rat autotaxin protein se 101-104 of sequence listing (AAY71986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                                                                                         sins, useful e.g. f
glucose uptake by
                                                                                                                                                                          Location/Qualifiers
265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              present sequence is not
                                                                                                                                                                                                                                                                                                                                                                                                                                                       useful
(R265K)
                                                                                                                                                                                                                                                                                                    2000WO-US12402
                                                                                                                                                                                                                                                                                                                                 99US-0306979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   126pp;
                                                                                                                                                                                                                                                                                                                                                               INC.
                                                                                                                                                                                                             /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                         proteins
variant
                                                                                                                                                                                                                                                                                                                                                               (ZYMO ) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
                                                                                                                                                                                                                                                                                                                                                                                                                          2001-007397/01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      stimulate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         858 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Page
                                                                                                                                                                                            Misc-difference
                                                                                                                                                                                                                                        WO200068386-A1
 autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (e.g. obesity autotaxin are
                                                                                                                                                                                                                                                                                                                                                                                                                                                         autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 obesity
                                                                                                                                                                                                                                                                                                  05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                07-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure;
                                                                                                                                                                                                                                                                      16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The
                                                                                                                                   Rattus sp. Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                              ,
UD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     obesity,
                                                                                                                                                                                                                                                                                                                                                                                          Kelly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Note:
                                                                                                                                                                                                                                                                                                                                                                                                                         WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               but
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nev
```

and

```
130
                                                                                  125
                                                                                                   190
                                                                                                                   185
                  Gaps
                                 70
                                                  65
                                                                                                  CTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRASYMKKGSKVMPNIE
                                 QIISLFTFAVGVSICLGFTAHRIKRAEGWEEGPPTVLSDSPWTNISGSCKGRCFELQEAG
                                         PPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENACHCSEDCLARGDC
                                                                           828
                  53;
Length
                  Indels
 22;
                 19;
  B
Score 4429.5;
Pred. No. 0;
                Mismatches
                 30;
88.3%;
illarity 88.7%;
Conservative 3
         Similarity
                803;
 Query Match
         Local
                                 11
                                                                  71
                                                                                  99
                                                                                                   131
                                                                                                                  126
                 Matches
         Best
                                                  d
                                                                 Qγ
                                                                                  q
                                                                                                                  g
                                  ð
                                                                                                   Óγ
```

specification

that

ij

sequence found

30 790 50 793 0 0 σ 430 490 550 0 0 ന 3 ന 0 73. 49 30 55 S 37 43 67 glucose; ic animal; ctivity; SNYLT PKKRRKIHRMDHYAA Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivit adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum gluccnon-insulin dependent diabetes mellitus; NIDDM; transgenic antiye I phosphodiesterase activity; ATP pyrophosphatase activitates. ATPase; adenosine-5'-triphosphatase activity. PVAP KRRQER FTPAKRPKRKVAP er cation/Qualifi  $\boldsymbol{\omega}$ Ś  $\infty$ ein SYGSP entry Prot( protein S gpe |||:|||| ||||: fdynydglrdtede FGPI Ŋ (fir standard FDYDYDGLHDT æ 91 S autotaxin |||||:|||| rpdndesc œ PDNEE ESEI |||| resei ||||| |pdfsi  $s_{p}$ AAY71986 DF 28-MAR-Φ 24 Ø σ Rattu 320 98 251 246 311 306 371 431 491 551 494 611 671 614 731 674 791 34 94 911 4 34 54 51 54 37 Key 98 Rai  $\infty$ RESULT AAY7198 ID AA g d d g D g D δ d d g g g Q Q Q Q õ ŏ Q Ö õ Š ŏ

```
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence is rat autotaxin protein. Autotaxin is a glycoprotein cytokine which increases insulin signalling in adipose tissue by producing substrate for adenosine receptors, resulting in inhibition of lipolysis, decreased hepatic gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes.

Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase (ATPase) and ATP pyrophosphatase activities. Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia). Transgenic animals that overexpress autotaxin are models for human metabolic diseases.
                                                                                                                                                                            Epitope
"This region is specifically claimed in claim 10"
                                                                                                         10
                                                                      claimed in claim 10
                                                                                                                    designated
                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         190
                                                                                                         claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                     site"
                                                                                                                                                                                                                                                                                                                                                                                               or treating diabetes mellitus cells and inhibit lipolysis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QIISLFTFAVGVSICLGFTAHRIKRAEGWEEGPPTVLSDSPWTNISGSCKGRCFELQEAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CINYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRASYMKKGSKVMPNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDATFHLRGREKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             858;
                                                                                                         in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53;
                                                                                                                                                       catalytic
                                                                                                                   autotaxin
                                                                                                         claimed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
            domain
                                                                                                                                196..208
/note= "Autotaxin phosphodiesterase
585..595
/label= Epitope
/note= "This region is enemified."
                                                                    specifically
                                                                                        Epitope
"This region is specifically
egion is absent in rat brain a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19;
           "Putative transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 4426.5;
Pred. No. 0;
1; Mismatches
                                  RGD_binding_domain
                                                                                                                                                                                                                                                                                                                                                                                                for
                                                         "Epitope
"This region is
                                                                                                                            PD-Ialpha sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                  126pp; English
                                                                                                                                                                                                                                                                                                                                                                                               autotaxin proteins, useful e.g. 1 ity, stimulate glucose uptake by
                                                                                                                                                                                                                                                                                                                                                                                             useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31;
                                                                                                                    region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            88.2%;
88.6%;
                                                                                                                                                                                                                                                                                       \boldsymbol{\sigma}
                                                                                                                                                                                                                                                              2000WO-US12402
                                                                                                                                                                                                                                                                                       990S-030697
                                           143..158
/label= E
                                                                    /note= "T
149..158
/label= E
                     ..124
                                                                                                                                                                                                                                                                                                              INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                /label=
143..158
                                                                                                         /note=
This re
                                                                                                                                                                                                                                                                                                                                                                                                                                  101-104;
            note-
                                                                                                                                                                                                                                                                                                              ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-007397/01
N-PSDB; AAD02131.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         858 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                               WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 1; Page
                      Binding-site
                                                                                                                                                                                                                                                             05-MAY-2000;
                                                                                                                                                                                                                                                                                      07-MAY-1999;
                                                                                                                                           Active-site
                                                                                                                                                                                                                                        16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  802;
                                                                                                                                                                                                                                                                                                                                     Ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match
                                                                                                                                                                                                                                                                                                                                                                                                        obesity,
                                                                                                                                                                                                                                                                                                              _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
Domain
                                             Region
                                                                                 Region
                                                                                                                                                                  Region
                                                                                                                                                                                                                                                                                                              (ZYMO
                                                                                                                                                                                                                                                                                                                                    Kelly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           끍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ~
                                                                                                                                                                                                                                                                                                                                                                                                Nev
                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
```

```
";
rariant.
                         305
                                                              30
                                                                                    490
                                                                                                                                                                             730
      S
                 0
                                        0
                                                  9
                                                                         \omega
                                                                                               433
                                                                                                          550
                                                                                                                                 610
                                                                                                                                            553
                                                                                                                                                       0
                                                                                                                                                                                                    790
                                                                                                                                                                                                                          850
                                                                                                                     B
                                                                                                                                                                  E
                                                                                                                                                                                        m
                                                                                                                                                                                                               \omega
                                                                                                                                                                                                                                     ^{\circ}
                                                                                                                                                                                                                                                 0
                                                                                                                     49
                                                                                                                                                       67
                                                                                                                                                                                                                                    79
                                                                                                                                                                                                                                                            85
                                                                                                                                                                                                               73
            rseq
(1111)
                                                                                   Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal, type I phosphodiesterase activity; ATP pyrophosphatase activity; ATPase; adenosine-5'-triphosphatase activity; mutant; mutein; vari
                                       SYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRKIHRMDHYAA
                                                                                                                                NHRWWGGQPLWITATKQGVKAGTFFWSVVIPHERRILTILRWLTLPDHERPSVYAFY:
                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                Z
                                                                                                                                                                                                                                                                                                               58
                                                                                                                                                                                                                                                                                                               œ
                                                                                                                                                                                                                                                                                                                                                (A194V)
                                                                                                                                                                                                                                                                                                              ein;
                                                                                                                                                                                                                                                                                                                                      entry)
                                                                                                                                                                                                                                                                                                               Prot
                                        SPEGPEESS
                                                                                                                                                                                                                                                                                                                                                autotaxin variant
                                       PDFSGHKYGPFGPEE
                                                                                                                                                                                                                                                                                                                                     (first
                                                                                                                                                                                                                                                                                                               tandard
                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                  \boldsymbol{\omega}
                                                                                                                                                                                                                                                                       91
                                                                                                                                                                                                                                                                                  \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                                                                     28-MAR-2001
                                                                                                                                                                                                                                                                            yesei
                                                                                                                                                                                                                                                                        YESEI
                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                   Rattus sp. Synthetic.
                                                                                                                                                                                                                                                                                                               96
                                                                                                                                                                                                                                                                                                                           Ō
                                                                                                                                                                                                                                                                                                              AAY7199
                                                                                                                                                                                                                                                                                                    10
                                                                         320
      186
                 21
                             246
                                        311
                                                  306
                                                             371
                                                                                               374
                                                                                                                                                                                                                                                                       911
                                                                                    431
                                                                                                          491
                                                                                                                     434
                                                                                                                                 551
                                                                                                                                                                             671
                                                                                                                                                                                                    731
                                                                                                                                                                                                              674
                                                                                                                                                                                                                          791
                                                                                                                                                                                                                                                 851
                                                                                                                                            494
                                                                                                                                                       611
                                                                                                                                                                  54
                                                                                                                                                                                                                                     734
                                                                                                                                                                                                                                                            794
                                                                                                                                                                                                                                                                                  854
                                                                                                                                                                                         61,
                                                                                                                                                                                                                                                                                                                                                Rat
                                                                                                                                                                                                                                                                                                         96
                                                                                                                                                                                                                                                                                                                                                                                                                    Key
                                                                                                                                                                                                                                                                                                    RESULT
AAY7199
                  ð
                             g
                                        ğ
                                                  qq
                                                              οŽ
                                                                         g
                                                                                               <del>Q</del>
                                                                                                           Š
                                                                                                                      g
                                                                                                                                  QΣ
                                                                                                                                            d
                                                                                                                                                                  d
                                                                                                                                                                                         g
                                                                                                                                                                                                               P
                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                               ID
                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                              Ω
                                                                                                                                                                                                     δ
                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                        Q
                                                                                     ð
```

ρ

ra

g

9 1 Н 3  $\boldsymbol{\omega}$ 

3 8 4

g 0

u S

670

61

55

550

610

730

 $\mathbf{c}$ 

.19

790

733

50

793

910

S

0 \_

```
Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal type I phosphodiesterase activity; ATP pyrophosphatase activity; ATP activity; mutant; mutein; var:
mtnplreidktvgqlmdglkqlrlhrcvnvifvgdhgmedvtcdrteflsnylt
                                                        substituted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ala
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
93
                                                                                                                                                                                                                                                                                                                                                                                                    AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              type
                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Wild
                                                                                                                                                                                                                                                                                                                                                                                                                                                           (A93V)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -0306979
                                                                                                                                                                                                                                                                                                                                                                                                   Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000WO-US124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                           autotaxin variant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                        (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZYMOGENETIC
                                                                                                                                                                                                                                                                                                                                                                                                   standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    c-difference
                                                                                                                                                                                                                                                                                                                                                   858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200068386-A1
                                                                                                                                                                                                                                                                                                                                 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-NOV-2000
                                                                                                                                                                                                                                                                                                                                 YESEI
                                                                                                                                                                                                                                                                                                                                           ||||
esei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rattus sp.
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                  AAY71995
                                                                                                                                                                                                                                                                                                                                                                                                                     AAY71995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \overline{\phantom{a}}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ZYMO
                                                                                                                                                                                                                                                                                                                                                                                11
                                                                                                                                                                                                                                 674
                                                                                                                                                                                                                                                                                                                                                    54
 320
                                                                           434
                                                                                                                 94
                                                                                                                                     611
                                                                                                                                                                                            614
                                                                                                                                                                                                               731
                                                                                                                                                                                                                                                                        734
                                                                                                                                                                                                                                                                                                              94
                    431
                                     74
                                                         91
                                                                                              551
                                                                                                                                                      54
                                                                                                                                                                          671
                                                                                                                                                                                                                                                     91
                                                                                                                                                                                                                                                                                            51
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ey
iis(
                                                                                                                                                                                                                                                                                                                                                                                RESULT
AAY71995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07
                                                                                                                                                                                                                                                                                            \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                                                                                    \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                             d
                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                    d
                                      D
                                                                            g
                                                                                                                  ద
                                                                                                                                     Q
                                                                                                                                                                           ğ
                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                       δŽ
                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                  δ
                    Q
                                                          δ
                                                                                               δ
                                                                                                                                                                                                           The present sequence is variant (A194V) of rat autotaxin protein.

Autotaxin is a glycoprotein cytokine which increases insulin
signalling in adipose tissue by producing substrate for adenosine
receptors, resulting in inhibition of lipolysis, decreased hepatic
gluconeogenesis and serum glucose levels, and increased insulin
sensitivity. It also inhibits differentiation of adipocytes.
Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase
(ATPase) and ATP pyrophosphatase activities. Autotaxin and its
analogues are used to stimulate glucose uptake by cells, particularly
to reduce serum glucose levels for treatment of non-insulin dependent
diabetes (NIDDM) in humans, or generally any condition associated
with elevated serum levels of glucose, lipid or free fatty acid
(e.g. obesity or dyslipidemia). Transgenic animals that overexpress
autotaxin are models for human metabolic diseases.

Note: The present sequence is not shown in the specification
but is derived from rat autotaxin protein sequence found in
                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         319
                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                           70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             65
                                                                                                                                                                for treating diabetes mellitus cells and inhibit lipolysis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRASYMKKGSKVMPNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          QIISLFTFAVGVSICLGFTAHRIKRAEGWEEGPPTVLSDSPWTNISGSCKGRCFELQEAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NHRWWGGQPLWITATKQGVKAGTFFWSVVIPHERRILTILRWLTLPDHERPSVYAFYSEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRKIHRMDHYAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ETRODKMTNPLREIDKIVGOLMDGLKQLKLRRCVNVIFVGDHGMEDVTCDRTEFLSNYLT
                                                                                                                                                                                                                                                                                                                                                                                                                     Length 858
                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
            þ
                                                                                                                                                                                                                                                                                                                                                                                                                    22;
           substituted
                                                                                                                                                                                                                                                                                                                                                                                                                                       20;
                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                           autotaxin protein selisting (AAY71986)
                                                                                                                                                                                                                                                                                                                                                                                                                     Score 4423.5;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                for
           Ala
                                                                                                                                                                   ı
Yq
                                                                                                                                                                useful e.g
                                                                                                                                                                                           English
           type
                                                                                                                                                                          glucose uptake
                                                                                                                                                                                                                                                                                                                                                                                                                                      30;
         "Wild
                                                                                                                                                                                                                                                                                                                                                                                                                     88.1%;
88.6%;
                                                                  2000WO-US12402
                                                                                     99US-0306979
                                                                                                                                                                                            126pp;
                                                                                                                                                                                                                                                                                                                                                           s derived from rat a
101-104 of sequence
                                                                                                        INC
                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                               New autotaxin proteins, obesity, stimulate gluco
           /note=
                                                                                                        (ZYMO ) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ï
 194
                                                                                                                                             2001-007397/01
                                                                                                                                                                                                                                                                                                                                                                                                                             1 Similarity
802; Conser
                                                                                                                                                                                                                                                                                                                                                                                        858 AA;
                                                                                                                                                                                            Page
Misc-difference
                             WO200068386-A1
                                                                  05-MAY-2000;
                                                                                    07-MAY-1999;
                                                                                                                                                                                            Disclosure;
                                               16-NOV-2000
                                                                                                                           ď,
                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 802
                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                         Kelly
                                                                                                                                             WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   246
                                                                                                                                                                                                                                                                                                                                                                                                                                                         11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           371
                  DD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
```

QY

ð

δ

ð

d

ð

g

ð

ğ

.rag

69

```
AAR86595
                                                                                                                                                                                                                                                                                                                                      melanoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 4;
                                                                                                                                                                                                                                                                      AAR86595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Krutzch
                                                                                                                                                                                                                                                                                                           N-tera
                                                                                                                                                                                                                                                                                                                                                        Ношо
                 554
                                                                       731
                                                                                                                             734
                                                                                                                                                51
                                                                                                                                                                  94
611
                                    671
                                                                                         674
                                                                                                            791
                                                                                                                                                                                    911
                                                                                                                                                                                                      854
                                                                                                                                                                                                                                 RESULT 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in
                                                                                                                                                 \boldsymbol{\omega}
                                                                                                                                                                                                                                                                               g
                                                                                                                                                                  g
                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                      d
                                                                                          d
                                                                                                                             g
                                                                                                                                                                                     ğ
                                                                        õ
                                                                                                             ð
                                                                                                                                                 ð
                                                                                                     gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes.

C Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase (ATPase) and ATP pyrophosphatase activities. Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly to reduce serum glucose levels for treatment of non-insulin dependent diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid (e.g. obesity or dyslipidemia). Transgenic animals that overexpress autotaxin are models for human metabolic diseases.

C Note: The present sequence is not shown in the specification but is derived from rat autotaxin protein sequence found in page 101-104 of sequence listing (AAY71986).
                          and
                                                                                                                                                                                                                                                                                                                                               130
                                                                                                                                                                                                                                                                                                                                                               125
                                                                                                                                                                                                                                                                                                                                                                                 190
                                                                                                                                                                                                                                                                                                                                                                                                    185
                                                                                                                                                                                                                                                                                                                                                                                                                      250
                                                                                                                                                                                                                                                                                                                                                                                                                                        245
                                                                                                                                                                                                                                                                                                                                                                                                                                                           310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53
                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                          70
                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                           Ø
                                                                                                    Ö
                                                                               Autotaxin is a glycoprotein cytokine which increases insulin
signalling in adipose tissue by producing substrate for adenosine
receptors, resulting in inhibition of lipolysis, decreased hepati
                                                                                                                                                                                                                                                                                                                                                                                                                     for treating diabetes mellitu cells and inhibit lipolysis
                                                                                                                                                                                                                                                                                                          QIISLFTFAVGVSICLGFTAHRIKRAEGWEEGPPTVLSDSPWTNISGSCKGRCFELQEAG
                                                                                                                                                                                                                                                                                                                                                     CTNYQVVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGFRASYMKKGSKVMPNIE
                                                                                                                                                                                                                                                                                                                   PPDCRCDNLCKSYTSCCHDFDELCLKTARGWECTKDRCGEVRNEENACHCSEDCLARGDC
                                                                                                                                                                                                                                                                                                                                                                                           PDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRK I HRMDHYAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 autotaxin protein
                                                                                                                                                                                                                                                                      858
                                                                                                                                                                                                                                                                                        53;
                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                      22;
                                                                                                                                                                                                                                                                                        20;
                                                                                                                                                                                                                                                                      DB
                                                                         rat
                                                                                                                                                                                                                                                                     Score 4422.5;
Pred. No. 0;
                                                                                                                                                                                                                                                                                        Mismatches
                                                                        of
                           for
                                                                        (A93V)
                              ,
py
                           9
                                                      English
                           eful e.g
uptake
                                                                        variant
                                                                                                                                                                                                                                                                                       31;
                          useful
                                                                                                                                                                                                                                                                     88.1%;
88.5%;
                                   glucose
                                                     126pp;
                                                                                                                                                                                                                                                                                        Conservative
                                                                       sednence is
                           axin proteins stimulate glue
                                                      ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -007397/01
                                                                                                                                                                                                                                                                               l Similarity
801; Conser
                                                                                                                                                                                                                                           858 AA;
                                                      Page
                           autotaxin
                                                     Disclosure;
                                                                        present
        2001
                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 801
                                   obesity,
                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                           -
                                                                                                                                                                                                                                                                                                                                             71
                                                                                                                                                                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                                                                                                                                                                   126
                                                                                                                                                                                                                                                                                                                                                                                                                      191
                                                                                                                                                                                                                                                                                                                                                                                                                                        186
                                                                                                                                                                                                                                                                                                                                                                                                                                                           251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  306
        WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         431
                                                                                                                                                                                                                                                                                                                                                                                 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    494
                           New
```

d

ð

g

õ

Dp

Qγ

 $\overset{\circ}{\Delta}$ 

qq

d

ð

Q

g

a

ŏ

d

δ

a

ð

d

ğ

```
AAR86559-R86596 represent autotaxin (ATX) and fragments of it. This sequence represents the full length protein sequence of the teratocarcinoma N-tera 2D1 ATX protein. ATX is an autocrine motility stimulating protein which is present in cancer cells. ATX stimulates both random and directed migration of melanoma cells. The tumourous form of ATX is a secreted protein, while the transmembrane bound form is not present in tumour cells. The cDNA encoding this sequence can be used in a vector, to transform cells. The recombinant cells can then be used to produce the peptide sequences. Antibodies specific for these sequences can be produced, and can be used in cancer diagnosis and therapy. Different sites of localisation of the protein are utilised for diagnosis and prognosis of the stages of tumour progression. The
                                                                   730
                                                                                                                                   790
                                                                                                                                                                                                      50
                                                                                                                                                                                                                                                                        910
670
                                                                                                                                                                                                                                       793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AMF
                                                                                                  \omega
                                                                                                 .29
                                                                                                                                                                                                                                                                                                           85
                                                                                                                                                                                                                       FDYDYDGLHDTEDKIKQYVEGSSIPVPTHYYSIITSCLDFTQPADKCDGPLSVSSFILPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ating protein;
therapy.
               GFLFPPYLSSSPEAKYDAFLVTNMVPMYPAFKRVWNYFQRVLVKKYASERNGVNVISGPI
RTRYDILYHTDF
                                                                                                                                                   it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Stracke
LQSDFDLGCTCDDKVEPKNKLDELNKRLHTKGSTEERHLLYGRPAVLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       stimul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cytokine; autocrine motility stimul
tumour; antibody; cancer diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ы
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schiffmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                & HUMAN SERVICES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 standard; Protein; 849 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ,
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    stimulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Murata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      autotaxin protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    112pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            95WO-US06613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94US-0346455
94US-0249182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (USSH ) US DEPT HEALTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Liotta L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    86-89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1996-020533/02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    motility
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     n; ATX;
cell; t
                                                                                                                                                                                                                                                                                                                                                                             858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Page
                                                                                                                                                                                                                                                                                                                                             91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9532221-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JUL-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-NOV-1994
25-MAY-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2D1
                                                                                                                                                                                                                                                                                                                                             YESEI
                                                                                                                                                                                                                                                                                                                                                               |||||
yesei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ,
L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Autotaxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cancer
```

Ø

```
the
the
                                                                                                        240
                                                                             120
                                                                                      180
                                                                                               180
                                                                                                                 240
                                                                                                                          96
                                                                                                                                   296
                                                                                                                                                                                                                                                598
                                                                                                                                                                                                                                                                  646
                                                                                                                                                                                                                                                                                    90
                                                                                                                                                                                                                                                                                                      99
                                                                                                                                            ^{\circ}
                                                                                                                                                     ^{\circ}
                                                                                                                                                              0
                                                                                                                                                                        Φ
                                                                                                                                                                                 0
                                                                                                                                                                                          α
                                                                                                                                                                                                   ^{\circ}
                                                                                                                                                                                                            œ
                                                                                                                                                                                                                     a
                                                                                                                                                                                                                              \boldsymbol{\omega}
                                                                                                                                                                                                                                       C
                                                                                                                                                                                                                                                         ~
                                                                                                                                                                                                                                                                           ^{\circ}
                                                                                                                                                                                                                                                                                             \mathbf{C}
                                                                                                                                                                                                                                                                                                               ^{\circ}
                                                                                                                                                                                                                                                                                                                        9
                                                 9
                                                           9
                                                                                                                                                               41
                                                                                                                                                                        35
                                                                                                                                                                                 47
                                                                                                                                                                                          41
                                                                                                                                                                                                   53
                                                                                                                                                                                                            47
                                                                                                                                                                                                                     59
                                                                                                                                                                                                                                       65
                                                                                                                                                                                                                                                                                                                        82
                                          ഗ
                                                                    2
                                                                                                                                            S
                                                                                                                                                     2
                                                                                                                                                                                                                                                         71
                                                                                                                                                                                                                                                                                                               σ
      ono
 block
                                          Ga
                                                                                                                                                              |:::: | |||||:||||||-wnillvcchpsraeiltilqwltlp
                                                                                                                                            RPAVLYRTRYDILYHTDFESGYSEIFLMLLWTSYTVSKQAEVSSVPDHLTSCVRPDVRVS
                                                                                                                                                                                                                                                                          PSFSQNCLAYKNDKQMSYGFLFPPYLSSSPEAKYDAFLVTNMVPMYPAFKRVWNYFQRVL
                                                                                                                                                                                                                                                                                                               KGSKVMPNIEKLRSCGTHSPYMRPVYPTKTFPNLYTLATGLYPESHGIVGNSMYDPVFDA
                                                                                                                                                                                                  ტ -
                                                                                                                           -PHERRILTILRWLTLP
                                                                                                                                                                                                                                                 Φ
                                                                                                                                                                                                                                      to advantageously
having little eff
                                σ
                                          \infty
                                84
                                 Length
                                          S
                                 • •
                                17
                                          on.
                                                                                                                          \leftarrow
                                DB
     Φ
ethods
; while
                                      d. No. 0;
Mismatches
                                 ·- O
                                Score 4341;
Pred. No. C
treatment me
form of AXT,
                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                  91
                                         11;
                                                                                                                                                                                                                                                                                                                                 KTSRSYPEILTLKTYLHTYESEI
                                86.5%;
87.9%;
ttive
s can be used in of the secreted form of AXT.
                                          ø
                                                                                                                                                 Local Similarity
Les 811; Conserv
                   AA
                  σ
                  84
 equences
ctivity onembrane f
                                                                                                                                             DHER
                                ry Match
                   Sequence
                                                                                                                                                              353
                                                                                                                                                                                                  473
                                                                                                                                                                                                                                                539
                                                                                                                                                                                                                                                                                   647
 eque
                                          ches
                                                                                                                                                                                 413
                                                                                                                                                                                          360
                                                                                                                                                                                                                     533
                                                                                                                                                                                                                              σ
                                                                                                                                                                                                                                       593
                                                                                                                                                                                                                                                         653
                                                                                                                                                                                                                                                                 599
                                                                                                                                                                                                                                                                           713
                                                                                                                                                                                                                                                                                                                        767
                                                                                                                                                                                                                                                                                                                                 893
                                                                    61
                                                                             61
                                                                                      121
                                                                                               121
                                                                                                         181
                                                                                                                 181
                                                                                                                          241
                                                                                                                                   241
                                                                                                                                            297
                                                                                                                                                     297
                                                                                                                                                                        324
                                                                                                                                                                                                            σ
                                                                                                                                                                                                                                                                                                      707
                                                                                                                                                                                                                                                                                                               83.
                                                                                                                                                                                                            41
                                                                                                                                                                                                                             47
                                                                                                                                                                                                                                                                                             11
 വ വ
                                Que:
Besi
Mat(
SSSSXS
                                                                                                                                                     d
                                                                                                                                                                        d
                                                                                                                                                                                          g
                                                                                                                                                                                                            d
                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                      d
                                                                             g
                                                                                               d
                                                                                                                 П
                                                                                                                                   g
                                                                                                                                                                                                                                       δŽ
                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                         ద
                                                                    Q
                                                                                       δ
                                                                                                         Qγ
                                                                                                                                             Qγ
                                                                                                                                                               δ
                                                                                                                                                                                 δ
                                                                                                                                                                                                   δ
                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                         2
                                                                                                                                                                                                                                                                            öζ
                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                ğ
                                                   ŏ
                                                                                                                          Š
```

```
The present sequence is autotaxin isolated from rat brain tissue.

This sequence is designated as nucleotide pyrophosphatase

(PD-Ialpha). Autotaxin is a glycoprotein cytokine increases insulin signalling in adipose tissue by producing substrate for adenosine receptors, resulting in inhibition of lipolysis, decreased hepatic gluconeogenesis and serum glucose levels, and increased insulin sensitivity. It also inhibits differentiation of adipocytes.

C Autotaxin has type I phosphodiesterase, adenosine-5'-triphosphatase activities. Autotaxin and its analogues are used to stimulate glucose uptake by cells, particularly c reduce serum glucose levels for treatment of non-insulin dependent c diabetes (NIDDM) in humans, or generally any condition associated with elevated serum levels of glucose, lipid or free fatty acid with elevated serum levels of glucose, lipid or free fatty acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for treating diabetes mellitus cells and inhibit lipolysis -
                                                                                                                                                                                   Rat; autotaxin; lipolysis; gluconeogenesis; insulin sensitivity; adipocyte; hypoglycemic; antidiabetic; anorectic; antilipemic; therapy; metabolic disease; obesity; dyslipidemia; serum glucose; non-insulin dependent diabetes mellitus; NIDDM; transgenic animal type I phosphodiesterase activity; ATP pyrophosphatase activity; ATP pyrophosphatase activity; ATP pyrophosphatase activity; bD-Ialpha; brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٠.
                                                                                                                                                                                                                                                                                                                                                                                      autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 885;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                      absent in rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ipidemia). Transgenic animals for human metabolic diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                           designated as PD-Ialpha.
                                                                                                                                                                                                                                                                                                                                                           RGD_binding_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d. No. 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 4306;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           English.
                                                                                                                                                                                                                                                                                                                                                                                    his region is
(AAY71986)"
                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
126..128
/label= RGD_binding_<
591..615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    eful e.g. 1
uptake by
849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or dyslipidemia). models for human n
                                                                      885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            126pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   useful
                                                                                                                                                                                                                                                                                                                                                                     591..615
/note= "This
sequence (AAY
ktsrsypeiltlktylhtyesei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               85.8%;
83.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62690E0-S066
                                                                       Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000WO-US12402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                glucose
                                                                                                                                                                                                                                                                      nucleotide pyrophosphatase
                                                                                                                                entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Page 110-113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   axin proteins, stimulate gluc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZYMOGENETICS
                                                                                                                              (first
                                                                                                                                                            Rat brain autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001-007397/01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 Similarity 792; Conser
                                                                      standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      885 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200068386-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    autotaxin
                                                                                                                                                                                                                                                                                                                                             Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-NOV-2000.
                                                                                                                              28-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 27;
                                                                                                                                                                                                                                                                                                      Sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          autotaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>,</u>
                                                                                                 AAY71989;
                                                                      AAY71989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 obesity,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ~
                                                                                                                                                                                                                                                                                                   Rattus
                                                                                                                                                                                                                                                                                                                                                                           Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kelly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (ZYMO
                                             13
827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                 Key
                                                        AAY71989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best
                                             RESULT
                                                                                                                                                                                                                                            ΚM
                                                                                                                                                                                                                                                           KW
KW
                                                                                                                                                                                                                                                                                       XX
OS
XX
FH
FT
FT
                                                                                                                                                                                                                                                                                                                                                                                                                                            XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        XX
PF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    XX
PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                XX
PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DE
                                                                                                                                                                                                                   ΚW
                                                                                                                                                                                                                                                                                                                                                                        FT
FT
FT
                                                                                                                                                                                                                                                                                                                                                                                                                                 PN
 d
                                                                                                                                                                                       ΚW
                                                                                                                                                                                                                                                                                                                                                                                                                XX
                                                                                                                XX
                                                                                                                                            X
```

9

MARRSSFQSCQIISLFTFAVGVSICLGFTAHRIKRAEGWEEGPPTVLSDSPWTNISGSCK 60

-4

ğ

7

AMF;

protein;

ine motility stimulating p cancer diagnosis; therapy

autocrine motility

antibody;

; cytokine; tumour; ant

ATX;

Autotaxin;

melanoma cell;

sapiens

Ношо

acid"

amino

"unspecified

/note= 889

Misc-difference

Misc-difference

Location/Qualifiers 864

acid"

amino

"unspecified

'note=

905

Misc-difference

acid"

amino

"unspecified

note=

Misc-difference

Misc-difference

acid"

amino

"unspecified

'note=

acid"

amino

"unspecified

/note= 927

acid"

amino

"unspecified

'note=

937

Misc-difference

944

Misc-difference

acid"

amino

"unspecified

'note=

950

Misc-difference

FF

acid"

amino

"unspecified

'note=

acid"

amino

"unspecified

'note=

Misc-difference

 $\mathbf{F}\mathbf{I}$ 단

967

Misc-difference

FF FF

acid"

amino

"unspecified

/note= 975

Misc-difference

FT FT

WO9532221-A2

XX

acid"

amino

"unspecified

/note=

```
230
                                                             290
           120
                                170
                                                                                           358
                                                                                                         418
                                                                                                                 533
                  σ
                          സ
                                        m
                                                      B
                                                                            321
                                                                                                                        \infty
                                                                                                                                       œ
                                                                                                                                              S
                                                                                                                                                            \boldsymbol{\omega}
                                                                                                                                                                           œ
                                                                                                                                                                                          08
                                                                                                                                \omega
                                                                                                                                                     œ
                                                                                                                                                                    Φ
                                                                                                                                                                                  8
                                                                                                                                                                                                 \boldsymbol{\omega}
                                                                                                                                                                                                        \boldsymbol{\omega}
                                                                                                                                                                                                               \boldsymbol{\omega}
                         17
                                                                     35
                                                                                                                                59
    O
                                                                                    41
                                                                                                  47
                                                                                                                        47
                                                                                                                                              64
                                                                                                                                                     59
                                                                                                                                                             68
                                                                                                                                                                    9
                                                                                                                                                                                                 77
                                                      29
                                                                                                                                       ന
                                                                                                                                                                           4
    S
                                                                                                                                       S
                                                                                                                                                                                                        \infty
                                                                                                                                                                                                               \boldsymbol{\omega}
                                                                                                                                                                                                        SEDESKWV
||||||||
= 중
                                        _
|
| da
                                                          :--
:---
                                                                    YDA
                                                                                                                                                                                         KIKQY
:||||
leikqy
                                 ρ
                                                                                                                                             ILRWL
                             -ppliffsvdg
                                                                                                  CH CH
                                                                                                                     SPEAKYI
||||||||
|speakyd
                                                                                                                 FDN
|---
<u>—</u> თ
<u> —</u> ў
           ENA(
                                                      FLVTNMVPMYPAFKRVWNYFQRVLVKKYASERNGVNVISGPIFDYDYDGLHDTED
           国 — 可
          ORCGEVRNE
| |||||||
|rsgevrne
                                                                                                                                                                           EEIKAAECPAGFVRP
                                                                                                                                                                                                                       91
           FDELCLKTARGWECTKDR
                                                                                                                                                                                                                      |:|||||||
|-wdegpptv]
                              _ cp
                         SEDCLARGDCCTNYQVVCKGESHWVDD------DCEEI
PPDCRCDNLCKSYTSCCHD
-\Psi
                                                                                                                                                                           : |:|||||
|svniclg1
|-:
|fai
 — +
|---
                                                                                                                                                                           SSVPDHLTSC
||:|:||:||:|
|sipehltno
| |:||
|stqvis
           ELQEAGE
   ĝ
                                                                                                                                                                           EVS:
    c_1
                                                                                                                                                                           SKQAEVS
                                                                                                                                                                                                                SSi
                                                                        : | | | : |
slpdne
                                                                                                                                                  ||||:
ptmpde
    Ď
          GRCFI
||||||
grcfe
|||:
marq
                                                                     TLP
                                                                                                                                                                                                               veg
                                                                                                                                                                                                        VEG
                  9
                                20
                                       174
                                                                                                         59
                                                                                                                        419
                                                                                                                                                                   599
                                                                                                                                                                                  59
                                                                                                                                                                                                719
           61
                         21
                                                      34
                                                              231
                                                                            91
                                                                                   54
                                                                                                                474
                                                                                                                                      φ
                                                                                                                                                     39
                                                                                                                                                                           83
                                                                                                                                                                                                        809
                                                                                                                                                                                                               779
                                                                                                                                                                                                                       69
    \vdash
                                               \vdash
                                                                     4
                                                                                                  414
                                                                                                                               34
                                                                                                                                              94
                                                                                                                                                            9
                                                                                                                                                                                         Φ
                                                                                                                                                                                                                              39
                                              17
                                                                     σ
                                                                                                                                      47
                                                                                                                                                            64
                                                                                                                                                                                         74
                                                                     2
                                                                                   ന
                  g
                                D.
                                               g
                                                              셤
                                                                            d
                                                                                          엄
                                                                                                         셤
                                                                                                                        g
                                                                                                                                      g
                                                                                                                                                     엄
                                                                                                                                                                   g
                                                                                                                                                                                  원
                                        9
                                                      Qγ
                                                                                   δŽ
                                                                                                  δŽ
                                                                                                                 Qγ
                                                                                                                               Qγ
                                                                                                                                              ğ
                                                                                                                                                                           Q
                                                                                                                                                                                          δ
                                                                                                                                                                                                a
                                                                                                                                                                                                               g
           δ
                          õ
                                                                     Q
                                                                                                                                                             õ
```

```
13;
                                                                                 85.3%;
ilarity 87.1%;
Conservative 1
                                                                      AA;
                                                                                     l Similarity
805; Conser
                                                                     979
                                                                                 Query Match
Best Local S
Matches 805
                                                                      Seduence
                                                                                                  Н
Q
                                                                                                      S
                                                                                                      cell
                                                                              A
                                                                                                      liver
                                                                              Φ
                                                                              σ
                                                                                                      from human
                                                                                              entry)
```

dard

(J)

0

 $\boldsymbol{\omega}$ 

580 AAR86

14

RESULT Q derived

Autotaxin

(f1

96

Ō

 $\boldsymbol{\omega}$ 

AAR86 XX XX XX DT XX

ä AARB6559-R86596 represent autotaxin (ATX) and fragments of it. ATX is an autocrine motility stimulating protein which is present in cancer cells. ATX stimulates both random and directed migration of melanoma cells. The tumourous form of ATX is a secreted protein, while the transmembrane bound form is not present in tumour cells. The croombinant cells can be used in tumour cells. The recombinant cells can then be used to produce the peptide sequences. Antibodies specific for these sequences can be produced, and can be used in cancer diagnosis and therapy. Different sites of localisation of the progression. The sequences can be used in treatment methods to advantageously block the activity of the secreted form of any little effect on the membrane. of the tumour nseq The Gaps 9 70; 979; Length Indels DB 17; 36; Mismatches Score 4279; Pred. No. 0

nseq

it

encoding

and DNA

protein,

stimulating and therapy

motility s diagnosis

Autotaxin cancer

in

WPI; 1996-020533/02

 $\stackrel{\cdot \cdot \cdot}{\Sigma}$ 

Stracke

ы

Schiffmann

J,

Murata

'n

Liotta

ņ

Krutzch

SERVICES

& HUMAN

US DEPT HEALTH

~

(USSH

94US-0346455 94US-0249182

28-NOV-1994; 25-MAY-1994;

95WO-US06613

24-MAY-1995;

30-NOV-1995

MARRSSFQSCQIISLFTFAVGVSICLGFTAHRIKRAEGWEEGPPTVLSDSPWTNISGSCK

.rag

69-

-831

483

g 0

> Ø Ħ

```
629
                                                                                                                                                                                                                   779
                                                                                                                                  479
                                                                                                                                                  539
                                                                                                                                                          52
                                                                                                                                                                  599
                                                                                                                                                                                                   719
                                                                                                                                                                                                                                   39
                                178
                                        238
                                                238
                                                                                                  59
                                                                                                          472
                                                                                                                  419
                                                                                                                          532
                                                                                                                                          592
                                                                                                                                                                          711
                                                                                                                                                                                           771
                                                                                                                                                                                                           831
        20
                120
                        178
                                                         294
                                                                 294
                                                                         354
                                                                                  24
                                                                                         414
                                                                                                                                                                                                                            91
9
                                                                                                          PKKRRRKIHRMDHYAAETRODKMTNPLREIDKIVGOLMDGLKOLKLRRCVNVIFVGDHGM
                                                                                                                         LVKKYASERNGVNVISGPIFDYDYDGLHDTEDKIKQYVEGSSIPVPTHYYSIITSCLDFT
                                                                         et
                                                                                                                                         SLDFF
쑹
                                        --PHERRILTILRWLT
                         -RASY
                                --vcspsinhllrgwlpmtsy
                                                             ||:||
|ilgwl
                                                                                                                                                          marrssfqscqdislftfavgvniclgftahrikraegweegpptvlsdspwtnisg
        -mtnplremhkivgqlmdglkqlklhrcvnvifv
                                                             SVDGF
                                                                                                                                                                                                                                                                                                 cell
                        2D1
                                                         ı
                                                        N-tera
                                                                                                                                                                                                                                                                                                  teratocarcinoma
                                                                                                                                                                                                                                            16
                                                                                                                                                                                                                                                                         \boldsymbol{\omega}
                                                                                                                                                                                                                                                                         \infty
                                                                                                                                                                                                                                            ⊏
                                                                                                                                                                                                                                                                         ei
                                                                                                                                                                                                                                                                                                 from
                                                                                                                                                                                                                                                                                         (first
                                                                                                                                                                                                                                                                        dard
                                                                                                                                                                                                                                                                                                 ived
                                                                                                          EDVTCD-
                                                                                                                                                                                                                                                                                        -JUN-1996
                                                                                                                                                                                                                                                                                                 Ö
                                                                                                                                                                                                                                                                         Ø
                                                                                                                                                                                                                                                                                                 Autotaxin
                                                                                                                                                                                                                                            RKT
                                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                    579
AAR86579
                                                                                                                  ЩĞ
                                                                                                                                                                                                                                                                15
                                                                                         55
                                                                                                                  360
                                                                                                                                                  480
                                                                                                                                                                  540
                                                                                                                                                                                  009
                                                                                                                                                                                                          772
                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                    840
                                                179
                                                         239
                                                                 239
                                                                         95
                                                                                                 25
                                                                                                          415
                                                                                                                          473
                                                                                                                                  420
                                                                                                                                                          593
                                                                                                                                                                                           712
                                                                                                                                                                                                   099
                                                                                                                                                                                                                                    80
                                                                                                                                                                                                                                            892
                                        179
Н
        61
                        21
                                121
                61
                                                                                 o)
                                                                                                                                                                          S
                                                                                                                                                                                                                                                                RESULT
AAR8657
ID AAX
XX
AC AAX
XX
DT 28
XX
XX
XX
                                                                                                                                                                  Dp
                                                                                                                                                                                  В
                d
                                a
                                        QΣ
                                                엄
                                                                 q
                                                                                 a
                                                                                                  В
                                                                                                                 d
                                                                                                                                  셤
                                                                                                                                                  DD
                                                                                                                                                                           δ
                                                                                                                                                                                           9
                                                                                                                                                                                                   ద
                                                                                                                                                                                                           Q
                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                    d
d
                                                                                                                          ð
                                                                                                                                          δŽ
                                                                                                                                                           ŏ
                                                                                                                                                                                                                            Qγ
                        δŏ
                                                         ò
                                                                         Q
                                                                                         δ
                                                                                                          õ
                                                                                                                                                                                                                                            δ
        Q
```

8

70;

Indels

40;

ed. No. 0; Mismatches

12;

Conservative

Local Similarity ses 727; Conser

Matches

92

S

Query Match Best Local

Score 3842; Pred. No. 0;

76.5%; 85.6%;

Length 788;

DB 17;

193

9

VVCKGESHWVDDDCEEIKAAECPAGFVRPPLIIFSVDGF -- RASYMKKGSKVMPNIEKLR

136

δ

d

61

2

194

ŏ

119

엄

309

254

ŏ

179

g

**OPDFSGHKYGPFGPEESSYGSPFTPAKRPKRKVAPKRRQERPVAPPKKRRKIHRMDHYA** 

235

d

370

ÓΣ

428

g

250

g

310

Qγ

249

427

YLTNVDDITLVPGTLGRIRSKFSNNAKYDPKAIIANLTCKKPDQHFKPYLKQHLPKRLHY

```
be used
of the
tumour
      AME;
                                                                                                                                                                                                                                                                                                                                                                AAR86559-R86596 represent autotaxin (ATX) and fragments of it. ATX an autocrine motility stimulating protein which is present in cancer cells. ATX stimulates both random and directed migration of melanoma cells. The tumourous form of ATX is a secreted protein, while the transmembrane bound form is not present in tumour cells. The cDNA encoding this sequence can be used in a vector, to transform cells. recombinant cells can then be used to produce the peptide sequences. Antibodies specific for these sequences can be produced, and can be in cancer diagnosis and therapy. Different sites of localisation of protein are utilised for diagnosis and prognosis of the stages of tup progression. The sequences can be used in treatment methods to advantageously block the activity of the secreted form of AXT, while having little effect on the membrane form of AXT.
                                                                                                                                                                                                                                                                                                 nseq
      stimulating protein;
                                                                                                                                                                                                                                                                                                it
                                                                                                                                                                                                                                                                                                encoding
                                                                                                                                                                                                                             Stracke
autocrine motility stimus
                                                                                                                                                                                                                                                                                                and DNA
                                                                                                                                                                                                                             ы́
                                                                                                                                                                                                                            Schiffmann
                                                                                                                                                                                                                                                                                                 protein,
                                                                                                                                                                                                   & HUMAN SERVICES
                                                                                                                                                                                                                                                                                                                                         English
                                                                                                                                                                                                                             Ь,
                   antibody;
                                                                                                                                                                                                                                                                                                motility stimulating diagnosis and therapy
                                                                                                                                                                                                                              Murata
                                                                                                                                                                                                                                                                                                                                         112pp;
                                                                                                                                                          94US-0346455
94US-0249182
       cytokine;
                   tumour;
                                                                                                                                                                                                   (USSH ) US DEPT HEALTH
                                                                                                                                                                                                                              'n
                                                                                                                                                                                                                                                                                                                                         62-65;
                                                                                                                                                                                                                                                       WPI; 1996-020533/02
N-PSDB; AAT06613.
                                                                                                                                                                                                                             Liotta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            788 AA;
        ATX;
                   melanoma cell;
                                                                                                                                                                                                                                                                                                                                          Page
                                                                          WO9532221-A2
                                                                                                                                                          28-NOV-1994;
25-MAY-1994;
                                                                                                     30-NOV-1995
                                                                                                                                24-MAY-1995
        Autotaxin;
                                                                                                                                                                                                                              J,
                                                                                                                                                                                                                                                                                                  Autotaxin
                                                                                                                                                                                                                                                                                                                in cancer
                                                                                                                                                                                                                                                                                                                                         Claim 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                              Krutzch
```

```
359
               419
                               479
                                       999
                                              539
                                                      726
                                                              599
                                                                      786
                                                                             629
                                                                                     846
                                                                                             719
                                                                                                     906
                       607
                                                                                                             σ
                                                                                                             17
       ANNRRIEDIHLLVERRWHVARKPLDVYKKPSGKCFFQGDHGFDNKVNSMQTVFVGYGPTF
                                                     yltnvdditlvpgtlgrirskfsnnakydpkaiianltckkpdqhfkpylkqhlpkrlhy
                                                                                                                    915
                                                                                                                            788
                                                                                                                    YLHTYESEI
||||||||||
ylhtyesei
                               420
300
               360
                                              480
                                                      667
                                                              540
       488
                       548
                                      608
                                                                             900
                                                                                             099
                                                                                                     847
                                                                                                             720
                                                                                                                    907
                                                                                                                            780
                                                                      727
                                                                                     787
       δ
               g
                               C
                                      Qγ
                       Q
                                              ĎЪ
                                                      Qγ
                                                              g
                                                                      Qγ
                                                                             a
                                                                                     QΥ
                                                                                             ద
                                                                                                     Qγ
                                                                                                             g
                                                                                                                    Q
                                                                                                                            원
```

Search completed: July 19, 2001, 14:45:00 Job time: 208 sec